

UNITED STATES DISTRICT COURT  
MIDDLE DISTRICT OF TENNESSEE  
NASHVILLE DIVISION

TENNESSEE CLEAN WATER NETWORK,  
and TENNESSEE SCENIC RIVERS  
ASSOCIATION,

Plaintiffs,

v.

TENNESSEE VALLEY AUTHORITY,

Defendant.

No. 3:15-cv-00424  
Judge Crenshaw  
Magistrate Judge Holmes

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**TVA'S POST-TRIAL PROPOSED FINDINGS OF FACT AND  
CONCLUSIONS OF LAW**

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## INTRODUCTION

This is a Clean Water Act citizen enforcement action involving a National Pollutant Discharge Elimination System (“NPDES”) permit (“Permit”) reissued to the Tennessee Valley Authority (“TVA”) for the Gallatin Fossil Plant (“Gallatin”) facility in 2012 by the Tennessee Department of Environment and Conservation (“TDEC”) under the Federal Water Pollution Control Act Amendments of 1972 (“CWA”) and the Tennessee Water Quality Control Act of 1977 (“TWQCA”).

Plaintiffs, Tennessee Clean Water Network (“TCWN”) and Tennessee Scenic Rivers Association (“TSRA”), filed this Clean Water Act (“CWA”) citizen enforcement action on April 14, 2015. Plaintiffs’ core claim is that there are flows of Coal Combustion Residual (“CCR”) leachate from the Gallatin Ash Pond Complex and Non-Registered Site to the Cumberland River in the form of seeps and non-seep conduit flows via hydrologically connected groundwater (such as through sinkholes and fissures). Plaintiffs allege that these flows constitute unpermitted discharges under the CWA.

In the Court’s September 9, 2016 Memorandum Opinion, the Court ruled that Plaintiffs’ “Claims A, C, D, E.b, E.c, E.d, and E.e will be **DISMISSED** except insofar as they deal with one or both of the following: discharges from the Non-Registered Site into the Cumberland River; and discharges from the Ash Pond Complex via hydrologic flows that are not seeps alone.”

Mem. Op., Doc. 139 at PageID 5368.<sup>1</sup>

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<sup>1</sup> The Court’s Memorandum Opinion also appears as *TCWN et al. v. TVA*, 206 F. Supp. 3d 1280 (M.D. Tenn. 2016). Litigants are, of course, entitled to rely on a court’s pre-trial summary judgment findings and rulings in preparing for and presenting evidence at trial. Thus, as noted in *Griffeth v. Utah Power & Light Co.*, 226 F.2d 661, 668 (9th Cir. 1955), pre-trial summary judgment rulings necessarily limit the scope of issues and proof at trial:

The Court further determined that “[o]pen factual issues exist with regard to the extent of the discharges that fall within these two circumscribed categories;” that “TVA has demonstrated that some seeps were contemplated by TDEC at the time of the reissuance of the NPDES Permit in 2012;” and that, if the alleged “discharges on which Plaintiffs rely were of the type disclosed to and reasonably contemplated by TDEC at the time the NPDES Permit was under consideration;” the discharges would be subject to the permit shield and, therefore, lawful under the CWA.<sup>2</sup> See Mem. Op., Doc. 139 at PageID 5367.

At trial, Plaintiffs had the burden of proving the existence of the alleged flows from the Non-Registered Site (seeps and conduit flows via hydrologically connected groundwater) and from the Ash Pond Complex (conduit flows via hydrologically connected groundwater) and that the alleged flows are prohibited discharges under the CWA.

In addition to this required prima facie showing, Plaintiffs had the burden of proving that the alleged flows were not within TDEC’s reasonable contemplation when TDEC reissued the

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(. . . continued)

Any facts so found [upon summary judgment] would be a part of the background of the case in the same manner as allegations pleaded by defendant and undenied by plaintiffs. Such facts would require neither further allegation nor proof by either party. Certainly, defendant had no further burden in regard to these matters.

If the relationship between summary judgment rulings and trial issues were otherwise, “litigants could no longer rely on pre-trial dispositions.” *Richie v. Short*, No. 91-5397, 1992 WL 44869, at \*3 (6th Cir. Mar. 4, 1992); see also *Mays v. TVA*, 274 F.R.D. 614, 626 (E.D. Tenn. 2011) (“[I]ssues regarding design, construction, and operations at the KIF plant—**have been previously determined and narrowed** in the Court’s orders on the application of the discretionary function doctrine and the nondiscretionary conduct issue.”) (internal citations omitted).

<sup>2</sup> Plaintiffs also allege violations of various provisions of the NPDES permit; however, the Court found that to the extent these Permit provisions are applicable, Mem. Op., Doc. 139 at PageID 5359-65, they are dependent upon Plaintiffs’ ability to prove the “alleged unauthorized discharges” from the Ash Pond Complex and the Non-Registered Site, *id.* at PageID 5343.

Gallatin Permit in 2012. *See* 33 U.S.C. § 1311(a) (excepting from CWA liability all discharges that are in compliance with an NPDES permit); *EPA v. Cal. ex rel. State Water Res. Control Bd.*, 426 U.S. 200, 223 (1976) (“[U]nless the plaintiff can show violation of the permit condition, violation of the [CWA] cannot be established.”).<sup>3</sup>

TVA hereby submits its Post-Trial Proposed Findings of Fact and Conclusions of Law (“PFFCL”) for the bench trial of this CWA citizen enforcement action, and for the reasons set forth herein and in TVA’s Rule 52(c) motion for judgment on partial findings (Doc. 236, Trial Tr. (Vol. 3) at 51:6-62:18),<sup>4</sup> TVA is entitled to judgment in its favor on all of Plaintiffs’ remaining claims. Specifically, at trial, Plaintiffs failed to prove (1) the existence of flows of CCR leachate from TVA’s Gallatin facility via hydrologically connected groundwater and (2) that such flows violate the Federal Water Pollution Control Act Amendments of 1972 (“Clean Water Act” or “CWA”). As set forth herein, Plaintiffs’ witnesses failed (1) “to prove a link between contaminated ground waters and navigable waters” and (2) “to trace pollutants from their source to surface waters.” *Ass’n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*18 (M.D. Tenn. Apr. 11, 2011) (internal quotations omitted). Moreover, even if Plaintiffs had met their burden of proof as to these essential elements of their prima facie case for showing a CWA violation (which they did not), Plaintiffs failed to meet their burden of proving that any flows from the Gallatin facility are beyond those which TDEC reasonably contemplated in 2012 when it reissued the NPDES permit to TVA for the Gallatin facility under the CWA and the TWQCA.

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<sup>3</sup> Emphasis added here and throughout unless otherwise noted.

<sup>4</sup> Citations to the trial transcript are to volume, page, and line number (e.g., “Trial Tr. (Vol. \_\_\_\_ ) at \_\_\_\_.”).



Plaintiffs also failed to meet their burden of proving that there has been irreparable environmental harm to the Cumberland River as a result of TVA's operation of the Gallatin facility. In fact, the evidence at trial established that numerous data points compel the opposite conclusion. Thus, because Plaintiffs have failed to meet their burden of proof for any of their claims, Plaintiffs are not entitled to civil penalties, and Plaintiffs' demand for a draconian injunctive remedy (closure-by-removal) that would cost TVA's ratepayers (the people who live in the TVA service area) \$2 billion dollars and take over 30 years to complete is not in the public interest and should be denied as unwarranted and economically wasteful. *See Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039 at \*9 (E.D. Va. Mar. 23, 2017) ("The Sierra Club demands draconian injunctive relief. It wants the Court to order Dominion to move over three million tons of coal ash to a landfill that may not even be willing to accept it.").<sup>5</sup>

## **I. Preliminary Findings and Conclusions.**

### **A. Nature of the Action and Jurisdiction.**

1. This is a CWA citizen enforcement action involving the NPDES Permit (Doc. 1-2 (JX 102))<sup>6</sup> reissued to TVA for the Gallatin facility in 2012 by TDEC. Mem. Op., Doc. 139 at PageID 5331.

2. A bench trial was held in Nashville, Tennessee, on January 30-February 2, 2017, after which the parties were afforded the opportunity to submit proposed findings of facts and conclusions of law and post-trial briefs. The last of those filings was made on April 14, 2017.

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<sup>5</sup> For ease of reference and in lieu of frequent internal cross-referencing, TVA has cited to certain quotations from the trial record in multiple sections of these PFFCL.

<sup>6</sup> Joint exhibits will be referred to as (JX\_\_\_\_), Plaintiffs' exhibits as (Pls. Ex. \_\_\_\_), and TVA's exhibits as (TVA Ex. \_\_\_\_). All exhibits are listed on the Exhibit and Witness List (Doc. 238).

3. After reviewing the parties' proposed findings and conclusions, their arguments, the record, the exhibits received in evidence, the testimony of the witnesses and consideration of their interests and demeanor, the Court enters the following Findings of Fact and Conclusions of Law in accordance with Rule 52(a) of the Federal Rules of Civil Procedure. Except where the Court discusses different testimony on a specific issue, any contrary testimony on that matter has been rejected in favor of the specific fact found. Further, the Court omits from its recitation facts it deems to be immaterial to the issues presented. Finally, to the extent that a finding of fact constitutes a conclusion of law, the Court so concludes; to the extent that a conclusion of law constitutes a finding of fact, the Court so finds.

4. The CWA provides that no citizen enforcement action may be commenced "prior to sixty days after the plaintiff has given notice of the alleged violation." 33 U.S.C. § 1365(b)(1)(A); *Sierra Club v. Hamilton Cnty. Bd. of Cnty. Comm'rs*, 504 F.3d 634, 637 (6th Cir. 2007); *Greene v. Reilly*, 956 F.2d 593, 594 (6th Cir. 1999).

5. On November 10, 2014, Plaintiffs sent EPA, TDEC, and TVA a 60-Day Notice of Intent to Sue ("NOI") pursuant to 33 U.S.C. § 1365(b) for alleged ongoing violations of the CWA at Gallatin. (NOI, Doc. 1-3 at PageID 159-60; Joint Stipulation of Facts ("J.Stip."), Doc. 226 (JX 278) at PageID 8327 ¶ 24.)<sup>7</sup>

6. The notice requirement of 33 U.S.C. § 1365(b) "provides federal and state governments with the time to initiate their own enforcement actions. If either the state or federal government is diligently prosecuting the Clean Water Act violation, a citizen suit for that same

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<sup>7</sup> Citations to the parties' January 27, 2017 Joint Stipulation of Facts will be to the ECF docket entry number with a parallel citation to the Joint Exhibit number (e.g., "J. Stip., Doc. 226 (JX 278) at PageID \_\_ ¶ \_\_.")

violation may not proceed.” *Sierra Club v. Hamilton Cnty. Bd. of Cnty. Comm’rs*, 504 F.3d 634, 637 (6th Cir. 2007).

7. The Sixth Circuit “has always required plaintiffs to adhere to § 1365’s notice provision because compliance with the notice requirement is a jurisdictional prerequisite to recovery under the statute.” *Bd. of Trustees of Painesville Twp. v. City of Painesville, Ohio*, 200 F.3d 396, 400 (6th Cir. 1999); *Greene v. Reilly*, 956 F.2d 593, 594 (6th Cir. 1999) (finding that, under *Hallstrom v. Tillamook Cnty.*, 493 U.S. 20, 26 (1989), compliance with the requirements of 33 U.S.C. § 1365 is a mandatory condition precedent for bringing a CWA citizen enforcement action); *accord Chute v. Montgomery Cnty. Shooting Complex*, No. 3:12-cv-0776, 2013 WL 681987, at \*3 (M.D. Tenn. Feb. 25, 2013); *Ass’n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*7 (M.D. Tenn. Apr. 11, 2011).

8. Plaintiffs’ NOI alleges violations only of the NPDES Permit reissued to TVA for the Gallatin facility in 2012 (Doc. 1-2 (JX 102)). (NOI, Doc. 1-3 at PageID 161, 164-74 & Doc. 1-4 at PageID 175, 178-89.) The NOI does not allege violations of any earlier NPDES permit. Therefore, to the extent Plaintiffs attempted at trial to allege violations of any permit in effect prior to TDEC’s reissuance of the current Permit in 2012 (see Trial Tr. (Vol. 2) at 37:23-38:20, 41:18-42:23, 47:4-48:14; 50:5-8; TVA’s 2005 NPDES Permit, JX 136), the Court concludes that it is without jurisdiction over such allegations because they were not included in the NOI, and thus, Plaintiffs failed to “give[] notice of the alleged violation” as required by 33 U.S.C. § 1365(b)(1)(A). *Bd. of Trustees of Painesville Twp. v. City of Painesville, Ohio*, 200 F.3d 396, 400 (6th Cir. 1999); *Greene v. Reilly*, 956 F.2d 593, 594 (6th Cir. 1999); *accord Chute v. Montgomery Cnty. Shooting Complex*, No. 3:12-cv-0776, 2013 WL 681987, at \*3 (M.D. Tenn.

Feb. 25, 2013); *Ass'n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*7 (M.D. Tenn. Apr. 11, 2011).

9. Plaintiffs filed this CWA citizen enforcement action on April 14, 2015. (Compl., Doc. 1; J.Stip., Doc. 226 (JX 278) at PageID 8328 ¶ 27.)

10. In the Court's September 9, 2016 Memorandum Opinion, the Court ruled that Plaintiffs' "Claims A, C, D, E.b, E.c, E.d, and E.e will be **DISMISSED** except insofar as they deal with one or both of the following: discharges from the Non-Registered Site into the Cumberland River; and discharges from the Ash Pond Complex via hydrologic flows that are not seeps alone." Mem. Op., Doc. 139 at PageID 5368.

11. Accordingly, as to Plaintiffs' claims that were not dismissed by the Court on September 9, 2016, and which were noticed properly, the Court concludes that Plaintiffs have satisfied the mandatory conditions precedent to bringing suit under 33 U.S.C. § 1365(b), *e.g.*, *Greene v. Reilly*, 956 F.2d 593, 594 (6th Cir. 1999), and that the Court has subject matter jurisdiction over this CWA citizen enforcement action pursuant to the general federal question jurisdiction statute, 28 U.S.C. § 1331, and the CWA's jurisdictional provision, 33 U.S.C. § 1365(a).

**B. The CWA's Diligent Prosecution Bar.**

12. At the close of trial, the Court instructed the parties to address in the findings and conclusions "how the diligent prosecution bar applies, if at all, on liability and/or the appropriate relief in light of the Court's" September 9, 2016 decision granting in part and denying in part TVA's motion to dismiss (Doc. 12) Plaintiffs' Claims A, C, D, and E under CWA's diligent prosecution bar, 33 U.S.C. § 1365(b)(1)(B). (Trial Tr. (Vol. 4) at 164:7-14.)

13. Because TVA's diligent prosecution motion to dismiss arose under Federal Rule of Civil Procedure 12(b)(6), the Court accepted as true all of the factual allegations in Plaintiffs' Complaint. (Doc. 139 at PageID 5337) (citing *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009).)

14. Thus, the Court accepted as true Plaintiffs' allegation that "Plaintiffs' claims are tailored to target alleged violations that were omitted from the State Enforcement Action." (Doc. 139 at PageID 5338; *see also* Doc. 139 at PageID 5341-43.)

15. The Court ruled that the "'diligent prosecution bar only applies to those issues sought to be addressed in a citizen action that overlap with those issues sought to be addressed by the government's suit.'" (Doc. 139 at PageID 5340 (quoting *United States v. Bd. of Cnty. Comm'rs of Hamilton Cnty., Ohio*, 1:02 CV 00107, 2005 WL 2033708 at \*11 (S.D. Ohio Aug. 23, 2005).)

16. Consequently, the Court found that, although "the Complaint in this action was crafted broadly, with references to many alleged violations that plainly overlap with the State Enforcement Action," Plaintiffs "have fairly pled some allegations that do not overlap." (Doc. 139 at PageID 5343.)

17. Specifically, the Court found that the following allegations were not overlapping and, thus, were not subject to dismissal for failure to state a claim under the diligent prosecution bar: "unlawful discharge of pollutants to the Cumberland River from the Non-Registered Site; and unlawful discharge of pollutants from the Ash Pond Complex [to the Cumberland River] through hydrologic flows that cannot be characterized as consisting of seeps alone." (Doc. 139 at PageID 5346.)

18. Nevertheless, the Court recognized “that the non-overlapping allegations are still closely connected” with the issues being addressed in the State Enforcement Action. (Doc. 139 at PageID 5346.)

19. Ultimately, the determination of whether a matter is being diligently prosecuted by the government’s enforcement action is a question of fact. *See Friends of Milwaukee’s Rivers & All. for Great Lakes v. Milwaukee Metro. Sewerage Dist.*, 556 F.3d 603, 609 (7th Cir. 2009) (“We instructed the district court to make findings of fact regarding whether the State’s prosecution of MMSD’s violations of the Act was diligent and to apply the law as we defined it to those facts. To do so, the court held an evidentiary hearing, in which it was necessary, among other things, to assess the credibility of witnesses.”); *Williams Pipe Line Co. v. Bayer Corp.*, 964 F. Supp. 1300, 1307, 1324-27 (S.D. Iowa 1997) (making findings of fact and conclusions of law on the issue of diligent prosecution following a four-day trial); *Friends of the Earth, Inc. v. Laidlaw Env’tl. Servs. (TOC), Inc.*, 890 F. Supp. 470, 474 (D.S.C. 1995) (“In its order of December 14, 1992, the court denied the Defendant’s motion to dismiss, but ruled that the determination of whether DHEC’s action constituted diligent prosecution sufficient to bar the Plaintiffs’ citizen suit involved disputed factual matters. Accordingly, the court decided to conduct a separate evidentiary hearing on the preliminary issue of whether the Plaintiffs’ citizen suit could proceed.”); *cf. Greene v. Reilly*, 956 F.2d 593, 594 (6th Cir. 1999) (adopting the Supreme Court’s construction of the RCRA citizen suit provision for purposes of interpreting the CWA’s citizen suit provision); *Tanglewood E. Homeowners v. Charles-Thomas, Inc.*, 849 F.2d 1568, 1574 (5th Cir. 1988) (finding that the question of diligent prosecution under RCRA is a question of fact); *Organic Chemicals Site PRP Grp. v. Total Petroleum, Inc.*, 6 F. Supp. 2d 660,

665 (W.D. Mich. 1998) (same); *Hudson Riverkeeper Fund, Inc. v. Harbor at Hastings Associates*, 917 F. Supp. 251, 256 (S.D.N.Y. 1996) (same).

20. The factual question of whether the government enforcement action is being “diligently prosecuted” may be answered during the pendency of the government enforcement action or even after it has concluded. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 890 F. Supp. 470, 486 (D.S.C. 1995) (“[A]lthough the ‘diligent prosecution’ condition in section 505(b)(1)(B) is phrased in the present tense, the court has determined that Congress intended to prohibit citizen suits where the governmental enforcement agency is diligently prosecuting or has diligently prosecuted a judicial action to enforce the same alleged violations of a particular permit, standard, or limitation.”); *see also Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 59 (1987) (“One of the most striking indicia of the prospective orientation of the citizen suit is the pervasive use of the present tense throughout § 505. . . . [T]he undeviating use of the present tense strongly suggests: the harm sought to be addressed by the citizen suit lies in the present or the future, not in the past.”).

21. At trial, because the standard of review governing motions to dismiss under Federal Rule of Civil Procedure 12(b)(6) was no longer applicable, Plaintiffs had the burden of proving that the State Enforcement Action does not seek to address (1) the unlawful discharge of pollutants into the Cumberland River from the Non-Registered Site; and (2) the unlawful discharge of pollutants from the Ash Pond Complex to the Cumberland River through hydrologic flows that cannot be characterized as consisting of seeps alone. *See Cmty. of Cambridge Envtl. Health & Cmty. Dev. Grp. v. City of Cambridge*, 115 F. Supp. 2d 550, 554 (D. Md. 2000) (holding that citizen plaintiffs have the burden of proving that the diligent prosecution bar does not apply); *Williams Pipe Line Co. v. Bayer Corp.*, 964 F. Supp. 1300, 1324 (S.D. Iowa 1997)

(“The plaintiff in a citizens suit bears the burden of proving the state agency’s prosecution was not diligent.”).

22. On January 7, 2015, the State of Tennessee (“State”) and TDEC filed an original enforcement action against TVA in Davidson County Chancery Court (“Chancery Court”) under the TWQCA and the TSWDA, and “[t]he complaint in the State Enforcement Action expressly identifies itself as having been filed ‘in response to’ the Plaintiffs’ notice letter.” (Mem. Op., Doc. 139 at PageID 5334; *see also* State Compl., Doc. 13-5 at PageID 320-21.)

23. The State Enforcement Action seeks “(1) a permanent injunction establishing a schedule for the defendant’s [TVA’s] compliance with the SWDA, the TWQCA, and the rules and regulations thereunder and (2) an order and judgment from this [Chancery] Court assessing civil penalties against the defendant [TVA] for violations of the SWDA and the TWQCA.” (Doc. 13-5 at PageID 320.)

24. “The Plaintiffs filed a Motion to Intervene in the State Enforcement Action on February 5, 2015, and the State of Tennessee and TVA stipulated to their intervention pursuant to Tenn. R. Civ. P. 24.01(3).” (Mem. Op., Doc. 139 at PageID 5335.)

25. The Court concludes that “[i]nstead of the more stringent federal standard, Tennessee employs a ‘liberal notice pleading standard,’ the primary purpose of which is merely ‘to provide notice of the issues presented to the opposing party and the court.’” *Jackson v. Cooper Tire & Rubber Co.*, 57 F. Supp. 3d 863, 868 (M.D. Tenn. 2014) (quoting *Webb v. Nashville Area Habitat for Humanity, Inc.*, 346 S.W.3d 422, 426 (Tenn. 2011)).

26. In the State Enforcement Action, the Chancery Court entered an Agreed Temporary Injunction on January 21, 2016, “requiring TVA to ‘develop an Environmental Investigation Plant (EIP) for the [Gallatin Plant] and submit it to TDEC within 60 days . . .’ [and]



directed TVA to include in the EIP ‘a schedule of the work to be performed to fully characterize the hydrology and geology of the [Gallatin Plant] and identify the extent of soil, *surface water*, and groundwater by CCR [Coal Combustion Residual] material.’” (Mem. Op., Doc. 139 at PageID 5335 (quoting Agreed Temp. Inj., Doc. 42-2 at PageID 1470)).

27. The Agreed Temporary Injunction required TVA to include in the EIP and to implement the following compliance activities:

- A. A complete hydrogeologic characterization of the GAF.  
. . . .
- B. A current groundwater elevation map *showing direction and rate of groundwater flow*, both laterally and vertically, for the GAF . . . . Based on the groundwater elevation map, TVA will conduct surface geophysical investigations *to evaluate the presence of preferred contaminant migration pathways*.

(Doc. 42-2 at PageID 1470-71.)

28. “Within 60 days of completion of the EIP,” the Agreed Temporary Injunction requires TVA, to “submit an Environmental Assessment Report (EAR) to TDEC” and to include in the EAR “an analysis of the extent of soil, *surface water*, and groundwater contamination by CCR material at the [Gallatin] site using the information obtained through the EIP.” (Doc. 42-2 at PageID 1473.)

29. TVA is required to periodically inform the Chancery Court of the status of work being performed under the EIP. (Mem. Op., Doc. 139 at PageID 5335.)

30. The Court finds that, on April 11, 2016, the State informed the Chancery Court that TVA had timely submitted its EIP to the State/TDEC as required under the terms of the Agreed Temporary Injunction. (First Status Report, Doc. 77-2 at PageID 2221, 2223.)

31. The Court finds that, on June 23, 2016, TVA informed the Chancery Court that, at the State’s direction, TVA had timely submitted a Revised EIP to the State/TDEC. (Second

Status Report, Doc. 109-2 at PageID 4450, 4452.)

32. Six status reports have been submitted regarding that work, and these reports show that substantial work has been and continues to be performed under the EIP, and TDEC and TVA continue to develop information that will allow the State to determine an appropriate remedy if there is a violation of the NPDES permit. (Agreed Temp. Inj., Doc. 42-2 at PageID 1470-73; First Status Report, Doc. 77-2 at PageID 2220-21; Second Status Report, Doc. 109-2 at PageID 4449-50; Third Status Report, Doc. 144-1 at PageID 5382-84; Fourth Status Report, Doc. 166-1 at PageID 6818-26; Fifth Status Report, Doc. 241-1 at PageID 9597-9609; Sixth Status Report, Doc. 241-2 at PageID 9611-9624.)

33. The Court finds that, based on the extensive evidence adduced at trial, TVA has been performing the work required under the Agreed Temporary Injunction and the EIP and that the scope of the State Enforcement Action is broad.

34. This was confirmed by the Assistant Attorney General for the State of Tennessee, Emily Vann, during a colloquy with the Court during trial:

MS. VANN: The current status of the State action is we are proceeding with the environmental investigation at the Gallatin site. . . .

. . . .

MS. VANN: The EIP has now been approved in total. It covers 16 investigations, separate investigations that have separate sampling analysis plans to go along with those. *It's a massive undertaking.* Data is starting to come in.

THE COURT: *For the ash pond or the nonregistered site?*

MS. VANN: *For the entire site.* So it covers the Ash Pond Complex. And in the State lawsuit, the Ash Pond Complex includes the three stilling ponds as well. *So it's the entire peninsula,* as well as some offsite sampling north of the facility, I believe. We've asked TVA to do some additional groundwater sampling if they can locate potential private wells that are still being used. That's part of the EIP process. . . .

. . . .

MS. VANN: The purpose of the environmental investigation is, once the

environmental investigation is complete - - TDEC is receiving data as it comes in. TVA is also reviewing that data. - - TVA will prepare an environmental assessment report that they present to the State. The State will review that, along with its own interpretation of the data, and ultimately the State will reach a corrective action determination.

(Trial. Tr. (Vol. 3) at 204:9-206:13.)

35. Both Plaintiffs and TVA concurred with Ms. Vann's characterization of the scope and status of the State Enforcement Action and the work being performed under the Agreed Temporary Injunction and the EIP. (Trial Tr. (Vol. 3) at 208:8-20.)

36. Accordingly, pursuant to the Court's application of the 33 U.S.C. § 1365(b)(1)(B) in its September 9, 2016 decision, Mem. Op., Doc. 139 at PageID 5345-46, the Court concludes that Plaintiffs remaining claims are foreclosed by the CWA's diligent prosecution bar because the State Enforcement Action seeks to address (1) the unlawful discharge of pollutants into the Cumberland River from the Non-Registered Site; and (2) the unlawful discharge of pollutants from the Ash Pond Complex to the Cumberland River through hydrologic flows that cannot be characterized as consisting of seeps alone. *See, e.g., Williams Pipe Line Co. v. Bayer Corp.*, 964 F. Supp. 1300, 1327 (S.D. Iowa 1997) (holding, after a trial on the merits, that the CWA violations alleged by the citizen plaintiff were within the scope of the diligent prosecution bar).

37. Therefore, the remaining liability claims and the prayer for relief in this citizen enforcement action are subject to dismissal for failure to state a claim upon which relief can be granted. Fed. R. Civ. P. 12(b)(6), (h)(2)(C); *cf. La. Env'tl. Action Network v. City of Baton Rouge*, 677 F.3d 737, 747 (5th Cir. 2012) (“**[W]e conclude that Congress has not clearly mandated that the CWA's ‘diligent prosecution’ provision is jurisdictional.**”); *Borough of Upper Saddle River, N.J. v. Rockland Cnty. Sewer Dist. #1*, 16 F. Supp. 3d 294, 318 (S.D.N.Y. Apr. 22, 2014) (citing *La. Env'tl. Action Network* for the proposition that “‘diligent prosecution’ is not a jurisdictional requirement”); *Ortiz Osorio v. Municipality of Loiza*, 39 F. Supp. 3d 159,

160 n.1 (D.P.R. Mar. 31, 2014) (citing the holding in *La. Env'tl. Action Network* “that the diligent prosecution bar is not a jurisdictional limitation on citizen suits, but rather a claim-processing rule”).<sup>8</sup>

**C. Burden of Proof in NPDES Enforcement Actions.<sup>9</sup>**

**1. Plaintiffs have the burden of proving each element of each claimed violation.**

38. The CWA’s strict liability provision at 33 U.S.C. § 1311(a) provides that, “[e]xcept as in compliance with this section and section[] . . . 1342 [the NPDES permit section] . . . , the discharge of any pollutant by any person shall be unlawful.”

39. “A party seeking to establish a Clean Water Act violation generally must establish “five elements . . . : (1) a *pollutant* must be (2) *added* (3) *to navigable waters* (4) *from* (5) *a point source*.” Mem. Op., Doc. 139 at PageID 5366 (quoting *Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 583 (6th Cir. 1988)) (italics in original)).

**2. Plaintiffs have the burden of proving that the permit shield exception does not apply.**

40. The CWA’s citizen suit provision provides in pertinent part that “any citizen may commence a civil action on his own behalf . . . against any person . . . who is alleged to be in violation of (A) an effluent standard or limitation under this chapter.” 33 U.S.C. § 1365(a)(1). And, for purposes of such suits, “the term ‘effluent standard or limitation under this chapter’

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<sup>8</sup> A complete discussion of the non-jurisdictional nature of the diligent prosecution bar is set forth in TVA’s Reply to the Newly-Asserted Arguments Raised in Plaintiffs’ Response in Opposition to TVA’s Notice of Recent Activity (Doc. 138 at PageID 5322-25).

<sup>9</sup> A comprehensive discussion of Plaintiffs’ burden of proof in this action, including Plaintiffs’ burden of proof as to the CWA’s permit shield exception, 33 U.S.C. § 1342(k), is contained in TVA’s bench brief (Doc. 231-1), and TVA incorporates by reference herein the points and authorities raised in TVA’s bench brief.

means . . . (6) a permit or condition thereof issued under section 1342 . . . .” 33 U.S.C. § 1365(f)(6).

41. “[F]or enforcement purposes, a discharger in compliance with the terms and conditions of an NPDES permit is deemed to be in compliance with those sections of the [CWA] on which the permit conditions are based.” *EPA v. Cal. ex rel. State Water Res. Control Bd.*, 426 U.S. 200, 205 (1976) (citing 33 U.S.C. § 1342(k), the CWA’s permit shield provision); *see also Weinberger v. Romero-Barcelo*, 456 U.S. 305, 315 n.10 (1982) (reiterating that “‘the permit defines, and facilitates compliance with, and enforcement of, a preponderance of a discharger’s obligations under the Amendments’” (quoting *EPA v. Cal. ex rel. State Water Res. Control Bd.*, 426 U.S. at 205)).

42. The Supreme Court has made it clear that, in a CWA citizen suit, the burden of proving non-compliance with an NPDES permit is on the citizen plaintiff:

For enforcement purposes § 402(k) [the permit shield provision] deems a permit holder who is in compliance with the terms of its permit to be in compliance “with sections 301, 302, 306, 307, and 403, except any standard imposed under section 307 for a toxic pollutant injurious to human health.” 33 U.S.C. § 1342(k) (1970 ed., Supp. IV). Thus, the principal means of enforcing the pollution control and abatement provisions of the [CWA] is to enforce compliance with a permit. Of the six subdivisions of § 505(f) defining “effluent standard or limitation,” only § 505(f)(6) refers to any of the standards or limitations as translated into the conditions of an NPDES permit. ***Thus, . . . a suit against a permit holder will necessarily be brought under the definition [of effluent standard or limitation] in § 505(f)(6); unless the plaintiff can show violation of the permit condition, violation of the [CWA] cannot be established.***

*EPA v. Cal. ex rel. State Water Resources Control Bd.*, 426 U.S. 200, 223 (1976).

43. The CWA’s “permit-shield language . . . states the ***exception*** to the other provisions of the CWA,” *Sierra Club v. ICG Hazard, LLC*, 781 F.3d 281, 287 (6th Cir. 2015), and it “makes clear that compliance with a permit constitutes an ***exception*** to the general strict

liability of the CWA,” *Piney Run Pres. Ass’n v. Cnty. Comm’rs of Carroll Cnty., Md.*, 268 F.3d 255, 267 (4th Cir. 2001).

44. In a CWA citizen suit against an NPDES permit holder, an essential element of plaintiff’s *prima facie* case is proving non-compliance with the NPDES permit—a citizen plaintiff’s failure to prove non-compliance precludes a finding of liability under 33 U.S.C. § 1311(a).<sup>10</sup>

45. The permit shield exception applies in the Sixth Circuit if (1) the discharge at issue is disclosed to the permitting authority during the permitting process, and (2) the discharge at issue was within the permitting authority’s reasonable contemplation at the time the permit was issued. Mem. Op., Doc. 139 at PageID 5355; *see also Sierra Club v. ICG Hazard, LLC*, 781 F.3d 281, 290 (6th Cir. 2015)); *Piney Run Pres. Ass’n v. Cnty. Comm’rs of Carroll Cnty., MD*, 268 F.3d 255, 269 (4th Cir. 2001) (holding that, for purposes of the permit shield, NPDES permit “compliance is a broader concept than merely obeying the express restrictions set forth on the face of the NPDES permit; all discharges adequately disclosed to the permitting authority are within the scope of the permit’s protection”).

46. As the Court already has recognized, under the CWA’s permit-shield provision at 33 U.S.C. § 1342(k), “[t]he determinative issue is whether the party is in ‘[c]ompliance with’ the

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<sup>10</sup> The permit shield provision of 33 U.S.C. § 1342(k) cannot be construed as an affirmative defense. *See Ford Motor Co. v. Transp. Indem. Co.*, 795 F.2d 538, 546 (6th Cir. 1986) (“An affirmative defense raises matters extraneous to the plaintiff’s *prima facie* case; as such, they are derived from the common law plea of ‘confession and avoidance.’ On the other hand, some defenses negate an element of the plaintiff’s *prima facie* case; these defenses are excluded from the definition of affirmative defense in Fed.R.Civ.P. 8(c).”) (italics in original); *Davidson v. Brady*, 732 F.2d 552, 553 (6th Cir. 1984) (“While common law good faith immunity is generally treated as an affirmative defense, . . . the affirmative statement by Congress that ‘[n]o liability shall arise’ if good faith is present makes bad faith an element of a section 7217 cause of action.”) (internal citation omitted).

relevant NPDES permit, 33 U.S.C. § 1342(k), which the Sixth Circuit has read to mean that the discharges at issue were within the reasonable contemplation of the issuing agency.” Mem. Op., Doc. 139 at PageID 5356.

47. Under “the ‘reasonable contemplation’ test, the Court should evaluate every feature of an alleged violation to determine if the relevant discharge or possibility thereof was adequately disclosed and reasonably contemplated.” Mem Op., Doc. 139 at PageID 5356.

48. The reasonable contemplation test “may lead the Court to examine the pollutants at issue, but also the location of discharge, its magnitude, or any other relevant trait.” Mem Op., Doc. 139 at PageID 5356.

**D. The CWA Does Not Apply to Groundwater Even if Hydrologically Connected to Navigable Surface Waters.**

49. Plaintiffs’ Ash Pond Complex and Non-Registered Site claims allege that pollutants are being discharged to the Cumberland River via hydrologically connected groundwater. Mem. Op., Doc. 139 at PageID 5336.

50. There is a split of authority among federal district courts nationwide on the “hydrologic connection” issue. *Cape Fear River Watch, Inc. v. Duke Energy Progress, Inc.*, 25 F. Supp. 3d 798, 809-10 (E.D.N.C. 2014) (analyzing split of authority); *see also Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039 at \*6 & n.11 (E.D. Va. Mar. 23, 2017) (discussing split of authority). The Sixth Circuit has not addressed it. *See Ass’n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*16-18 (M.D. Tenn. Apr. 11, 2011) (discussing split of authority).

51. Several federal district courts outside the Sixth Circuit have concluded that the CWA does not apply to groundwater even if it is hydrologically connected to navigable surface waters. *Cape Fear River Watch, Inc. v. Duke Energy Progress, Inc.*, 25 F. Supp. 3d 798, 810

(E.D.N.C. 2014) (“After close review of the competing analyses, this court finds the reasoning of the Court of Appeals for the Seventh Circuit persuasive, and holds that Congress did not intend for the CWA to extend federal regulatory authority over groundwater, regardless of whether that groundwater is eventually or somehow ‘hydrologically connected’ to navigable surface waters. There is support for this holding in both the language and legislative history of the CWA and in the Supreme Court’s ruling in *Rapanos*.”); *Tri-Realty Co. v. Ursinus Coll.*, No. CIV.A. 11-5885, 2013 WL 6164092, at \*9 (E.D. Pa. Nov. 21, 2013) (“After close review of the competing analyses, this Court finds the reasoning of the Court of Appeals for the Fifth Circuit in *Rice* persuasive, and holds that Congress did not intend either the CWA or the OPA to extend federal regulatory authority over groundwater, regardless of whether that groundwater is eventually or somehow “hydrologically connected” to navigable surface waters.”); *see also Chevron U.S.A. Inc. v. Apex Oil Co., Inc.*, 113 F. Supp. 3d 807, 817 (D. Md. 2015) (holding, in an Oil Pollution Act case “that Congress did not intend for groundwater to fall within the purview of ‘navigable water,’ even if it is hydrologically connected to a body of ‘navigable water’”).<sup>11</sup>

52. Other federal district courts outside the Sixth Circuit have concluded that the CWA does apply to groundwater hydrologically connected to navigable surface waters. *See, e.g., Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039 at \*6 (E.D. Va. Mar. 23, 2017 (“Courts have disagreed on whether the CWA encompasses groundwater if it is hydrologically connected to surface water. As discussed in its ruling on Dominion’s motion to dismiss, this Court finds most persuasive the line of cases that hold that discharges to

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<sup>11</sup> The Oil Pollution Act “must be construed . . . in *pari materia*” with the CWA. *In re DEEPWATER HORIZON*, 745 F.3d 157, 173 (5th Cir.); *Chevron U.S.A. Inc. v. Apex Oil Co.*, 113 F. Supp. 3d 807, 816 n.5 (D. Md. 2015) (“[C]ourts routinely apply cases interpreting the CWA to interpret the OPA.”).



groundwater hydrologically connected to surface water are covered by the CWA.”); *Williams Pipe Line Co. v. Bayer Corp.*, 964 F. Supp. 1300, 1327 (S.D. Iowa 1997) (same).

53. Federal district courts within the Sixth Circuit are similarly split. *Compare Kelley ex rel. People of Mich. v. United States*, 618 F. Supp. 1103, 1107 (W.D. Mich. 1985) (“[T]he remainder of the *Exxon* opinion and the unmistakably clear legislative history both demonstrate that Congress did not intend the Clean Water Act to extend federal regulatory and enforcement authority over groundwater contamination. Rather, such authority was to be left to the states. Therefore, Count I of Plaintiffs’ complaint is dismissed.”), and *Huron Mountain Club v. U.S. Army Corps of Eng’rs*, No. 2:12-CV-197, 2012 WL 3060146, at \*12 (W.D. Mich. July 25, 2012) (“This Court has previously held that ‘Congress did not intend the Clean Water Act to extend federal regulatory and enforcement authority over groundwater contamination.’”) (quoting *Kelley*), *aff’d*, 545 F. App’x 390 (6th Cir. 2013), and *Cooper Indus., Inc. v. Abbott Labs.*, No. 93-CV-193, 1995 WL 17079612, at \*4 (W.D. Mich. May 5, 1995) (Plaintiff’s “allegations are insufficient to state a cause of action under the Clean Water Act since they concern ground waters and not “waters of the United States.” As stated in *Oconomowoc Lake*, the fact that these ground waters are hydrologically connected to some surface waters is insufficient to transform this case to a FWPCA cause of action.”), with *Ass’n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*17-18 (M.D. Tenn. Apr. 11, 2011) (finding that groundwater with a “direct hydrologic connection to surface waters of the United States” is covered by the CWA but that plaintiffs must “‘prove a link between contaminated ground waters and navigable waters’” because “[a] general hydrological connection among all waters will be insufficient,” and therefore, plaintiffs must “‘trace

pollutants from their source to surface waters.’’ (quoting *Mutual Life Ins. Co., v. Mobil Corp.*, No. Civ A 96-CV1781, 1998 WL 160820, at \*3 (N.D.N.Y Mar. 31, 1998))).

54. Only two federal circuit courts of appeal have addressed this issue, and both have concluded that the CWA does not apply to groundwater, even if it is hydrologically connected to navigable surface waters. *Vill. of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 965 (7th Cir. 1994) (holding that CWA jurisdiction does not extend to groundwater contamination caused by drainage from an artificial pond because the “Clean Water Act does not attempt to assert national power to the fullest. . . . and that “[n]either the Clean Water Act nor the EPA’s definition asserts authority over ground waters, just because these may be hydrologically connected with surface waters”); accord *Rice v. Harken Expl. Co.*, 250 F.3d 264, 272 (5th Cir. 2001) (“In light of Congress’s decision not to regulate ground waters under the CWA/OPA, . . . we hold that a generalized assertion that covered surface waters will eventually be affected by **remote, gradual, natural seepage** from the contaminated groundwater is insufficient to establish liability under the OPA.”).

55. The Court agrees with those courts that have concluded that the CWA does not apply to groundwater, regardless of whether that groundwater is hydrologically connected to navigable surface waters. Accordingly, the Court concludes that Plaintiffs’ Complaint fails to state a claim upon which relief can be granted. Fed. R. Civ. P. 12(h)(2)(C) (“Failure to state a claim upon which relief can be granted . . . may be raised . . . at trial.”).<sup>12</sup>

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<sup>12</sup> TVA asserted this argument at trial as part of TVA’s Rule 52(c) motion for judgment on partial findings. (Doc. 236, Trial Tr. (Vol. 3) at 52:6-21.)

## **II. Background Findings and Conclusions.**

### **A. The Construction History of the Gallatin Facility.**

56. Gallatin is a four-unit coal-fired power plant located in Sumner County, Tennessee, about five miles south of the city of Gallatin on the Odom's Bend Peninsula formed by the Old Hickory Lake portion of the Cumberland River between River Miles 242.5 and 246. (J. Stip., Doc. 226 (JX 278) at PageID 8325 ¶ 1.)

57. Gallatin "serves as a base load on TVA's power generation system and generates electricity for the greater Nashville area, *Tenn. Env'tl. Council v. TVA*, 32 F. Supp. 3d 876, 880 (E.D. Tenn. 2014), and "[i]n a typical year, Gallatin generates enough electricity to supply about 565,000 homes." (*Gallatin Fossil Plant*, <https://lakeinfo.tva.gov/web/sites/gallatin.htm> (last visited Apr. 14, 2017)).<sup>13</sup>

58. The Cumberland River and Old Hickory Lake adjacent to the Gallatin facility are navigable waters of the United States.<sup>14</sup> (J. Stip., Doc. 226 (JX 278) at PageID 8325 ¶ 2.)

59. In June 1952, TVA prepared a Preliminary Report on The Gallatin Site For Nashville Area Steamplant ("Preliminary Report"). (J. Stip., Doc. 226 (JX 278) at PageID 8325 ¶ 6; JX 68 at PageID 1701.)

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<sup>13</sup> Courts may take judicial notice of facts from "public records and government documents available from reliable sources on the Internet." *United States v. BioPort Corp.*, 270 F. Supp.2d 968, 972 (W.D. Mich. 2003), *aff'd*, 388 F.3d 209 (6th Cir. 2004); *see also Ryan v. TVA*, No. 3:14-cv-356-TAV-HBG, 2015 WL 1962173, at \*3 & n.2 (E.D. Tenn. Apr. 30, 2015) (taking judicial notice of records and documents available on TVA's public website); *Arvest Bank v. Byrd*, 814 F.Supp.2d 775, 787 & n.4 (W.D. Tenn. 2011).

<sup>14</sup> *See also* U.S. Army Corps of Engineers, Nashville District, *Cumberland River and Tributaries*, <http://www.lrn.usace.army.mil/Missions/Regulatory/Navigable-Waters-List/Cumberland-River-and-Tributaries/> (last visited Apr. 14, 2017)).

60. In connection with TVA's preliminary site planning, TVA conducted a transit and tape survey of Odom's Bend peninsula during 1952 which TVA used to prepare a Land Acquisition Map for the Gallatin facility. (Direct Testimony of Walter G. Kutschke ("Kutschke DT"), Doc. 229-2 (TVA Ex. 206) at PageID 8589;<sup>15</sup> JX 68 at PageID 1734; Doc. 236, Trial Tr. (Vol. 3) at 178:7-10.)

61. TVA's 1952 Land Acquisition Map does not show an intermittent drainage feature identified as Sinking Creek. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8589; Trial Tr. (Vol. 3) at 178:10-12; JX 68 at PageID 1734; JX 211; JX 212.)

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<sup>15</sup> By stipulation of the parties and with approval of the Court, the parties submitted written direct testimony statements pursuant to Local Rule 39.01(c)(6)(d) ("\_\_\_\_\_DT" or "DT Statements") for each witness the parties disclosed as a witness who may provide testimony at trial pursuant to Rule 26(a)(2)(B) and (C) ("Expert Witness"). (JX 277 & Doc. 221.) The parties stipulated and agreed that the CV and testimony set forth in each Expert Witness DT Statement is sufficient to establish that the particular Expert Witness is qualified as an expert by knowledge, skill, experience, training, or education, pursuant to Federal Rule of Evidence 702. (Doc. 221 at PageID 8293.) Nothing in the parties' stipulation, however, precluded or limited either party from addressing the qualifications of any Expert Witness insofar as they go to the weight of that Expert Witness's testimony, or pursuant to the factors set forth in Rule 702(a)-(d) as to whether an Expert Witness may testify in the form of an opinion as to a particular topic or issue. (*Id.*) The DT Statements from which Expert Witness testimony was elicited at trial were tendered to the Court as Exhibits, and with approval of the Court, each DT Statement became part of the trial record in its entirety.

Pls. Ex. 17	Doc. 227-1, Direct Testimony of Chris Groves ("Groves DT")
Pls. Ex. 18	Doc. 227-2, Direct Testimony of Mark Quarles ("Quarles DT")
Pls. Ex. 19	Doc. 227-3, Direct Testimony of Barry Sulkin ("Sulkin DT")
Pls. Ex. 20	Doc. 228-1, Direct Testimony of Avner Vengosh ("Vengosh DT")
TVA Ex. 205	Doc. 229-1, Direct Testimony of Gabriel W. Lang ("Lang DT")
TVA Ex. 206	Doc. 229-2, Direct Testimony of Walter G. Kutschke ("Kutschke DT")
TVA Ex. 207	Doc. 158-6, Direct Testimony of Neil E. Carriker ("Carriker DT")
TVA Ex. 208	Doc. 230-2, Direct Testimony of John C. Kammeyer ("Kammeyer DT")
TVA Ex. 209	Doc. 230-1, Direct Testimony of Ann Elizabeth Perry ("Perry DT")

62. In July 1952, Congress appropriated funds for the construction of Gallatin Units 1 and 2. Supplemental Appropriation Act of 1953, Pub. L. No. 82-547, 66 Stat. 637, 645 (July 15, 1952); TVA Annual Report to Congress (1952), JX 199 at PageID 1742.)

63. For the Gallatin plant site and future ash disposal areas, TVA acquired (through purchase and condemnation) in the name of the United States of America twenty-four tracts of land between 1952 and 1954, comprising a total of 1,950.25 acres. (GSP Tract (Tract Nos. 1-24) Acquisition Records, JX 147; JX 148; TVA Technical Report No. 36, JX 149 at PageID 1784.) Title to the Gallatin property is in the United States of America. 16 U.S.C. § 831c(f), (h); GSP Tract (Tract Nos. 1-24) Acquisition Records, JX 147; JX 148.)<sup>16</sup>

64. The General Plan for the Gallatin project layout (Drawing No. 10N200) shows that there were three areas designated for future ash disposal: Areas No. 1 and No. 2 (which became Non-Registered Site #83-1324) and Area No. 3 (which is the site of the current Ash Pond Complex). (TVA Technical Report No. 36, JX 149 at PageID 1793.)

65. Construction began on May 11, 1953. (TVA Technical Report No. 36, JX 149 at PageID 1787); TVA Annual Report to Congress (1953), JX 200 at PageID 1803.)

66. Gallatin commenced operation in 1956. (J. Stip., Doc. 226 (JX 278) at 8325 ¶ 3.)

## **B. The Management and Treatment of CCRs at the Gallatin Facility.**

### **1. The Non-Registered Site.**

67. Gallatin's generation of electricity through the burning of coal produces waste material in the form of coal ash, generally referred to as coal combustion residuals or CCRs. Mem. Op., Doc. 139 at PageID 5328; *see also* J. Stip., Doc. 226 (JX 278) at PageID 8325 ¶ 4.

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<sup>16</sup> *See also Jackson v. TVA*, 462 F. Supp. 45, 54 (M.D. Tenn. 1978) (“All real and personal property for TVA activities is acquired and held by the United States . . . .” (quoting *Monsanto Co. v. TVA*, 448 F. Supp. 648, 652 (N.D. Ala. 1978)), *aff'd*, 595 F.2d 1120 (6th Cir. 1979).

68. From 1956 until 1970, Gallatin sluiced CCRs to a 65-acre surface impoundment on the western edge of the plant site which was known as Ash Disposal Areas No. 1 and No. 2 (or Areas A, B, C, and D) but now typically is referred to as the Non-Registered Site or the Abandoned Ash Pond. (J. Stip., Doc. 226 (JX 278) at PageID 8325-26 ¶ 7.)

69. In 1970, TVA stopped sluicing CCRs to the Non-Registered Site (J. Stip., Doc. 226 (JX 278) at PageID 8325-26 ¶¶ 7, 12), and plant wastewater has not been channeled to the Non-Registered Site for over 40 years (Trial Tr. (Vol. 3), at 78:3-5, 182:14-16).

70. In September 1995, TVA submitted to TDEC a closure plan for the Non-Registered Site. (JX 181; Trial Tr. (Vol. 1) at 191:22-192:1; J. Stip., Doc. 226 (JX 278) at PageID 8326 ¶ 8.)

71. In February 1997, TDEC approved TVA's closure plan for the Non-Registered Site, noting that "natural reclamation has occurred over much of the 58-acre site and that several areas which are heavily vegetated and support an abundant wildlife population will not be disturbed." (JX 182 at 1; Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8559; *see also* Trial Tr. (Vol. 1) at 192:2-4.)

72. Pursuant to the closure plan, TVA regraded portions of the Non-Registered Site to improve drainage and to prevent ponding and excess infiltration from surface runoff. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8560; JX 181 at 62.)

73. In November 1998, TVA notified TDEC that it had completed closure of the Non-Registered Site, but TVA continued a TDEC-approved ongoing groundwater monitoring program. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8560; *see also* Trial Tr. (Vol. 1) at 192:5-8.)

74. Today, the Non-Registered Site is a closed CCR surface impoundment that has been dewatered and is covered with soil and vegetation, including trees. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8561; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8692.)

**2. TVA does not dispute that there is coal ash in the Cumberland River as a result of TVA's "wholly past" operation of the Non-Registered Site.**

75. TVA used coal ash to perform repairs and raises of the perimeter embankment dikes at the Non-Registered Site. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8558; Trial Tr. (Vol. 1) at 190:15-17.)

76. As early as 1967, TVA reports show that the perimeter embankment dikes of the Non-Registered Site experienced occasional slides and frequent erosion, which caused ash to escape into the Cumberland River. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8558; JX 165 at 1-2; JX 166 at 1; JX 167 at 1, 3; JX 168 at 1; Trial Tr. (Vol. 3) at 77:25-78:3.)

77. At trial, TVA's geotechnical engineering witness, Gabriel Lang, utilized the Joint Map to explain that these "slides essentially occurred around the perimeter of the non-registered site. Some of those slides occurred on the extreme south end, some along the western side, and then others to the north" (Trial Tr. (Vol. 3) at 78:8-14) (Joint Map, Doc. 220-1 (JX 279)). Thus, Plaintiffs' claim that the NRS sampling locations depicted on the Joint Map (NRS 1, NRS 2, NRS 3, NRS 4, NRS 5, and NRS 6) show evidence of coal ash is not probative because Plaintiffs failed to show that their NRS sampling locations are distinguishable from the past slide locations of the Non-Registered embankment dikes (which were repaired and raised with coal ash). (*See* Joint Map, Doc. 220-1 (JX 279).)

78. Mr. Lang's testimony was un rebutted. In fact, Plaintiffs' environmental consultant witness, Mark Quarles, agreed with Mr. Lang on this point and testified that the June

1967 slide of the Non-Registered Site embankment dikes, which were made of earth and ash, occurred just above Plaintiffs' sampling locations NRS 1 and NRS 5. (Trial Tr. (Vol. 1) at 190:5-17.)

79. In 1974, TVA reported that "ash carried by surface runoff is escaping from the Non-Registered Site and is forming a small delta in Old Hickory Lake." (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8558 (quoting JX 172 at 1); Trial Tr. (Vol. 3) at 78:18-23.)

80. In the late 1960s and early 1970s, TVA reported that there was erosion of minor amounts of ash from one spillway associated with these ponds. In 1975, TVA closed the spillway, sealed it with concrete and vegetated the area to prevent further erosion. At trial, Mr. Lang testified that, "based on the available historical information," it is his "opinion to a reasonable degree of certainty that the presence of localized ash in the river near the NRS spillway is related to this historical erosion and not related to TVA's current operations at Gallatin." (Trial Tr. (Vol. 3) at 80:5-14; Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8558; JX 172; JX 173.)

81. Again, Mr. Lang's testimony was un rebutted, and again Mr. Quarles agreed that ash escaped from Area B of the Non-Registered Site in 1974, that the escaped ash formed a small delta in Old Hickory Lake, and that the location of this small delta of ash was adjacent to Plaintiffs' sampling locations NRS 2 and NRS 6. (Trial Tr. (Vol. 1) at 190:24-191:13.)

82. The 1983 inspection of the Non-Registered Site documented a slide which occurred in the exterior dike of area A, directly adjacent to two small coves of the Cumberland River across from the barge unloader, (JX 178 at 1, 7), and "these dikes were raised with ash fill" (JX 179 at 1). (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8559.) This testimony, too, was un rebutted.



83. Thus, although Plaintiffs' witness, Mr. Quarles, testified that in 2014 and 2015 he took the samples along the shoreline of the Non-Registered Site designated as NRS 1, NRS 2, NRS 3, NRS 4, NRS 5, and NRS 6 on the Joint Map (Quarles DT, Doc. 227-2 (Pls. Ex. 18) at PageID 8407-10, Joint Map, Doc. 220-1 (JX 279)), Mr. Quarles provided no testimony or evidence about how long the CCR materials found in the samples he gathered had been in the Cumberland River or how the CCR materials came to be in the Cumberland River:

Q. Your report does not state how long the materials obtained from your samples had been in the river, though, does it?

A. It does not.

Q. Okay. And your report does not state how long the materials obtained from your Ash Pond Complex samples had been in the river, does it?

A. Does not.

Q. *And you further state in your report that, quote, your investigation did not determine how the waste reached the Cumberland River, correct?*

A. *Correct.*

Q. *For both your Ash Pond Complex and NRS samples, correct?*

A. *Correct.*

(Trial Tr. (Vol. 1) at 186:2-15.)

84. Similarly, as to Plaintiff' sampling location NRS 6, Plaintiffs' witness, Mr. Sulkin, conceded that his reports do not provide a date as to when the CCR material was deposited in the sample area. (Trial Tr. (Vol. 2) at 115:17-25.)

85. Therefore, Plaintiffs' contention that there is ash in the Cumberland River adjacent to the Non-Registered Site (Compl., Doc. 1 at PageID 19, 24), is not sufficient to meet their burden of proof with respect to Plaintiffs' allegations of ongoing permit violations because the preponderance of the evidence (which was un rebutted) shows that ash documented by

Plaintiffs is related to occurrences that are wholly past. *See Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 64 (1987) (holding that 33 U.S.C. § 1365 “does not permit citizen suits for wholly past violations”).

86. Further, those historical occurrences of ash loss from the Non-Registered Site are outside the CWA’s five-year statute of limitations. *See* 28 U.S.C. § 2462; *Pub. Interest Research Grp. of N.J., Inc. v. Powell Duffryn Terminals Inc.*, 913 F.2d 64, 74-75 (3d Cir. 1990) (holding that the five-year federal statute of limitations, 28 U.S.C. § 2462, applies to citizen suits under the CWA); *Frilling v. Honda of Am. Mfg., Inc.*, No. C-3-96-181, 1996 WL 1619348, at \*8-9 (S.D. Ohio Oct. 21, 1996) (same).

### **3. The Ash Pond Complex.**

87. In May 1969, the TVA Board authorized the construction of a new ash disposal pond at the location of Ash Disposal Area 3. (Minutes of Meeting of the TVA Board of Directors on May 22, 1969, JX 207 at PageID 1854.)

88. In September 1969, TVA obtained a 50-year permit from the United States Army Corps of Engineers (“Corps”) to use Old Hickory reservation property (conveyed from TVA to the Corps in 1955) “for the deposit of ash disposal in connection with the operation of the TVA Gallatin Steam Plant.” (Department of the Army, Permit to Other Federal Government Department or Agency to Use Property Old Hickory Lock and Dam Project, No. DACW62-4-7C-89, JX 209 at PageID 3396; Transfer of Land and Easements from Tennessee Valley Authority to United States Department of the Army (June 7, 1955), JX 204 at PageID 1829.)

89. In April 1970, TVA placed the new Ash Disposal Area No. 3 in service, and this site now typically is referred to as the Ash Pond Complex. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8590; Trial Tr. (Vol. 3) at 182:14-183:1.)

90. Since April 1970, TVA has been sluicing CCRs to the approximately 476-acre unlined Ash Pond Complex. (J. Stip., Doc. 226 (JX 278) at PageID 8326 ¶ 12; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8590.)

91. The Ash Pond Complex is located near the northern perimeter of the Gallatin site, and the ponds currently are in active use, although Pond E is being dewatered. (J. Stip., Doc. 226 (JX 278) at PageID 8326 ¶ 13; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8590.)

**4. TVA does not dispute that there were leaks from the Ash Pond Complex in the 1970s, but TVA repaired these “wholly past” leaks in the late 1970s.**

92. In June 1970, TVA personnel suspected that ash sluice water from the Ash Pond Complex might be leaking. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8591.)

93. In the early 1970s, TVA undertook several investigations in an attempt to determine whether the Ash Pond Complex was leaking. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8591.)

94. The results of these early 1970s investigations were not conclusive. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8591; JX 43, Attach. 1.)

95. TVA inspections from 1972-1976 reported that there was no evidence of loss of ash from the Ash Pond Complex. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8591; JX 170 at 2; JX 171 at 3; JX 172 at 2; JX 173 at 2; JX 174 at 2.)

96. In January 1977, TVA convened an NPDES task force meeting to locate “the groundwater leak(s) from the ash disposal pond at the Gallatin Steam Plant.” (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8591; JX 43 at 1.)

97. In the winter and spring of 1977, TVA conducted investigations and surveys which indicated that there were leaks in the bottom of the pond via sinkholes and/or solution cavities. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8591; JX 43; JX 41 at 1-2.)

98. In the summer of 1977, TVA performed repairs to the Ash Pond Complex. The 1977 repairs were successful in sealing the sinkholes and allowing the ash sluice water to leave the pond through the spillways, as designed. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8591; JX 42 at 3; JX 222 at 1-2; JX 89 at 1; JX 88 at 1.)

99. In May 1978, TVA identified locations in the northeast arm of the ash disposal area (outside of the then-active pond) that required repairs so that storage capacity could be expanded in the future. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8591; JX 222 at 1-2.)

100. In the summer of 1978, TVA successfully performed the repairs (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8591), and the results of that work “indicat[ed] ***that no hydraulic connection between the pond and the river presently exists.***” (Memorandum – Inspection of Repairs to Northeast Arm of Ash Disposal Pond – Gallatin Steam Plant (Aug. 8, 1978).) (JX 89 at 1 (emphasis added); *see also* JX 88 at 1 (“This [repair] effort was apparently successful, and we have now sealed the pond to the extent that the water has risen to the designed elevation . . . . [T]he progressive rising of the water before the rain started leads us to believe that a complete sealing of the pond has been achieved.”).)

101. In May 1979, TVA discovered a leak in the northeast arm of the ash disposal pond, and that leak was repaired. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8591; JX 39; JX 53; JX 67 at 8.)

102. After 1979, TVA records indicate that the sinkhole repairs performed at the Ash Pond Complex in the late 1970s were successful. (Potential Ground-Water Quality Impacts at TVA Steam Plants (Sept. 1982), JX 44 at 33 (“***During 1977, Construction Services Branch began surface repair of the sinkholes to prevent leakage from the ash disposal pond to the groundwater system. Compacted, graded fill materials were used to seal the sinkholes. Currently, no problems with leaks from the pond are known.***”); see also JX 41 at 1 (“In 1978 and 1979, sinkholes and potential seepage areas in the eastern portion of this area were identified and sealed.”); Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8592.)

103. TVA’s karst engineer, Dr. Kutschke, concluded that, based upon his review of TVA records, “***the sinkholes that were leaking in 1970 were all repaired by TVA.***” (Trial Tr. (Vol. 3) at 184:18-25; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8592-93; JX 44 at 33.)

104. Plaintiffs’ hydrogeologist witness, Dr. Groves, testified regarding the ash sluice water that leaked through karst features in the 1970s that “[i]f it was not leaking, I presume it would have gone through the outfall . . . into the Cumberland River.” (Trial Tr. (Vol. 1) at 72:23-73:10.)

105. Dr. Groves ignored the conclusion in the 1982 report (JX 44 at 33) noting that “***no problems with leaks from the pond are known.***” (Trial Tr. (Vol. 1) at 78:2-25.)

106. Since 1979, TVA’s records do not contain documentation of sinkholes or leaks from ***within*** the Ash Pond Complex to groundwater. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8592-93.)

107. According to Dr. Kutschke, this finding is corroborated by current information, his own personal observations, and the findings of TVA’s independent engineering consultant, Stantec, Inc., and the EPA’s independent engineering consultant, Dewberry Consultants, LLC.

(Trial Tr. (Vol. 3) at 184:18-185:10; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8592-93; JX 67 at 8; JX 126 at p. 7-11.)

108. Plaintiffs' allege incorrectly that "[o]ther sinkholes appeared again and caused illegal discharges of coal ash waste in at least 2005 and 2010." (Compl., Doc. 1 at PageID 16.)

109. For example, Plaintiffs' hydrogeologist witness, Chris Groves, testified that "TVA documents reflect that sinkholes have been identified at or near the Ash Pond Complex in 1979, 1990, 1991, 2005, 2010, and, most recently, a likely sinkhole was identified by TDEC n November of 2016." (Trial Tr. (Vol. 1) at 38:14-17.)

110. However, regarding the alleged 1990, 2005, 2010, and 2016 sinkholes, Dr. Groves' testimony was wholly unreliable. First, Dr. Groves lacks any personal knowledge because, as he conceded on cross-examination, he has never been to Gallatin Fossil Plant. (Trial Tr. (Vol. 1) at 53:12-18.) Second, Section 3.3.2 of Stantec's 2010 report entitled "Karst Activity" discusses the sinkholes that were identified and repaired in 1990, 2005, and 2010 (JX 67 at 8), and although Dr. Groves was aware of the 2010 Stantec Report, he failed to cite Stantec's information on karst activity at Gallatin in either his reports or in his direct testimony statement (Trial Tr. (Vol. 1) at 69:1-71:8). Third, Dr. Groves failed to clarify that the 2010 sinkhole occurred outside (i.e., not within) the Ash Pond Complex. (Trial Tr. (Vol. 1) at 70:4-20; JX 67 at 8.) Fourth, without any explanation, Dr. Groves disregarded Stantec's conclusion that, other than the repairs noted, "Gallatin has not experienced any known additional karst-related problems within the ponds in recent years." (Trial Tr. (Vol. 1) at 70:21-71:8; JX 67 at 8.) Fifth, Dr. Groves offered no support for his assertion that a sinkhole was identified in November 2016, and even if he had, TVA's geotechnical engineering witness, Gabriel Lang, rebutted Dr. Groves' unsupported assertion noting that, unlike Dr. Groves, he had personally observed this

feature, that it was an erosional feature (i.e., not a karst/sinkhole feature), and that it is “completely submerged” and, thus, the entire pond (Pond E) is holding water. (Trial Tr. (Vol. 3) at 134:23-139:14.)

111. TVA’s karst engineering witness, Dr. Kutschke, testified that, in 2005, TVA undertook to expand the Pond E portion of the Ash Pond Complex, and in the course of the construction work (not during the operation of the ash ponds), TVA identified and repaired sinkholes. (Trial Tr. (Vol 3) at 185:11-20.) These repairs were documented by Stantec (JX 67 at 8) and Dewberry Consultants (JX 126 at 7-9 to 7-10).

112. In May 2010, after the “one-thousand-year flood event in Tennessee” caused by the “unprecedented storm [that] swept through the Cumberland River Basin,” *A.O. Smith Corp. v. United States*, 774 F.3d 359, 361, 363 (6th Cir. 2014), Dr. Kutschke testified that TVA identified four sinkholes on the Gallatin property to the north of Stilling Pond C, all of which were outside of the Ash Pond Complex and not within the pond area, and that TVA repaired these sinkholes. (Trial Tr. (Vol. 3) at 186:5-187:23; JX 94 at 1-2 & Fig. 1.)

113. Therefore, Plaintiffs’ assertion that there was an illegal discharge of coal ash waste from sinkholes is not supported by the trial record. (Trial Tr. (Vol. 3) at 187:2-9; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8593.) Further, Plaintiffs’ contentions related to sinkhole repairs associated with the 2005 Pond E expansion work and the 1,000-year flood event in 2010 are not relevant to the issues remaining for trial because they are “wholly past” and barred by the CWA’s five-year statute of limitations. *See* Fed. R. Evid. 401, 402.

114. The Court concludes that the leaks which occurred and which were repaired by TVA in the late 1970s are not relevant because they are wholly past, *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 64 (1987) (holding that 33 U.S.C. § 1365 “does

not permit citizen suits for wholly past violations”), and because they occurred well outside the CWA’s five-year statute of limitations. *See* 28 U.S.C. § 2462; *Pub. Interest Research Grp. of N.J., Inc. v. Powell Duffryn Terminals Inc.*, 913 F.2d 64, 74-75 (3d Cir. 1990) (holding that the five-year federal statute of limitations, 28 U.S.C. § 2462, applies to citizen suits under the CWA); *Frilling v. Honda of Am. Mfg., Inc.*, No. C-3-96-181, 1996 WL 1619348, at \*8-9 (S.D. Ohio Oct. 21, 1996) (same).

**C. The History of NPDES Permitting at the Gallatin Facility.**

**1. Since 1976, discharges from the Gallatin facility have been covered by NPDES permits issued by EPA and TDEC.**

115. On April 30, 1976, EPA issued the first NPDES Permit to TVA for the Gallatin facility (Permit No. TN0005428) authorizing TVA’s use and operation of the Ash Pond Complex in its current location, and the Gallatin NPDES Permit became effective on June 15, 1976. (J. Stip., Doc. 226 (JX 278) at PageID 8327 ¶¶ 19-20; Gallatin 1976 NPDES Permit, JX 208 at PageID 1857, 1881-82.)

116. Prior to 1977, States were “precluded from regulating Federal facilities” under the CWA, 51 Fed. Reg. 32,834, 32,834 (Sept. 16, 1986), but in response to *Hancock v. Train*, 426 U.S. 167, 172, 180 (1976) and *EPA v. Cal. ex rel. State Water Resources Control Bd.*, 426 U.S. 200 (1976) (holding that federal agencies were not subject to state CWA permitting programs), Congress amended the CWA in 1977, to authorize States “to regulate Federally owned or operated facilities under their water pollution control programs.” 51 Fed. Reg. 32,834, 32,834 (Sept. 16, 1986).

117. “In December of 1977, the EPA authorized the State of Tennessee to issue some types of NPDES permits, which the State grants and enforces through TDEC.” Mem. Op., Doc. 139 at PageID 5331 (citing 56 Fed. Reg. 21,376 (1991).)



118. “EPA’s delegation of the NPDES program to the State of Tennessee in December 1977 did not include authorization to regulate Federal facilities . . . .” 51 Fed. Reg. 10,236, 10,236 (Mar. 25, 1986.)

119. In 1986, EPA delegated to the State of Tennessee the authority under the CWA to administer the NPDES permit program in Tennessee with respect to Federal facilities, including Gallatin. Mem Op., Doc. 139 at PageID 5331 (citing 51 Fed. Reg. 32,834 (1986); 51 Fed. Reg. 32, 834 (Sept. 16, 1986) (approving Tennessee’s request for authority to administer the NPDES program with respect to federal facilities in Tennessee)).

## **2. TDEC’s reissuance of the Gallatin Permit in 2012.**

120. In May 2009, TVA submitted to TDEC an application for renewal of the Gallatin Permit, which had been continually reissued by EPA/TDEC since 1976. (J. Stip., Doc. 226 (JX 278) at PageID 8327 ¶¶ 21-22; JX 135; JX 136.)

121. Under the CWA, NPDES permits are issued to “Facilities.” The EPA’s NPDES regulations require that “[a]ll applicants for NPDES permits . . . must provide the following information . . . [n]ame, mailing address, and location of the *facility* for which the application is submitted,” 40 C.F.R. § 122.21(f)(2), and EPA’s regulations define a Facility as “*any NPDES point source’ or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.*” 40 C.F.R. § 122.2); *see also* 40 C.F.R. § 123.2, 123.25(a)(4) (applying these regulations to state-administered NPDES programs).

122. The Permit renewal application specifically states that the application is for a Federal Facility (“US TVA Gallatin Fossil Plant”), that TVA is the “Operator,” and that the “Status of the Operator” is “Federal.” (JX 135 at TVGF\_108966-67.)

123. TDEC reissued Gallatin's NPDES Permit for a five-year period beginning July 1, 2012, and ending May 31, 2017. (J. Stip., Doc. 226 (JX 278) at PageID 8327 ¶ 23; Permit, Doc. 1-2 (JX 102) at PageID 58.)

124. The Permit authorizes the discharge (defined in the Permit as "the addition of pollutants to waters from a source") of wastewater from the Ash Pond Complex to the Cumberland River through Outfall 001 at Cumberland River mile 240.5. (Permit, Doc. 1-2 (JX 102) at PageID 58; Trial Tr. (Vol. 2) at 42:7-11; J. Stip., Doc. 226 (JX 278) at PageID 8326 ¶ 16.)

125. Discharges through Outfall 001 "are predominantly (73%) fly ash and bottom ash sluice water with additional coal pile runoff and other plant wastewater." (Permit, Doc. 1-2 (JX 102) at PageID 92.)

126. The Permit's anticipated discharge volume through Outfall 001 is 27 million gallons of wastewater per day. (Permit, Doc. 1-2 (JX 102) at PageID 106, 121, 139.)

127. As a standard part of the NPDES permitting process, TDEC explains the basis for its regulatory judgments in a permit rationale. (Permit, Doc. 1-2 (JX 102) at PageID 72); Tenn. Comp. R. & Regs. 0400-40-05-.02(72) ("A 'rationale' . . . is a document that is prepared when drafting an NPDES permit or permit action. It provides the technical, regulatory and administrative basis for an agency's permit decision.")

128. According to the testimony of Vojin Janjic, the Manager of the Water-Based Systems Unit of TDEC's Division of Water Resources, a "[p]ermit rationale . . . is a document that accompanies the permit, and it describes the process . . . the rationale that we [TDEC] use to arrive at permit limitations and conditions." (Trial Tr. (Vol. 2) at 34:7-11.)

129. TDEC issued a forty-seven page Rationale for the Gallatin Permit when it released the draft permit for public comment. (Permit, Doc. 1-2 (JX 102) at PageID 111-57.)

130. “During the public comment period, TDEC received review comments from EPA Region 4 (EPAR4), TVA, and the Environmental Integrity Project.” (Permit, Doc. 1-2 (JX 102) at PageID 92.)

131. TDEC issued a nineteen page Addendum to Rationale wherein TDEC specifically addressed the public comments TDEC received from EPAR4, TVA, and the Environmental Integrity Project. (Permit, Doc. 1-2 (JX 102) at PageID 92-110.)

132. TDEC’s Mr. Janjic explained that the addendum to rationale “is a part of our [TDEC’s] overall understanding and knowledge of what is happening at the facility” and that it is an explanation for why TDEC put something in the permit or does not put something in the permit. (Trial Tr. (Vol. 2) at 55:17-56:10.) Specifically, Mr. Janjic testified that the rationale and addendum to rationale “are an explanation of a thought process of how we [TDEC] arrived at setting up terms, limitations, and restrictions in the body of the permit.” (Trial Tr. (Vol. 2) at 56:10-14.)

133. The Environmental Integrity Project submitted comments on behalf of itself and several other environmental advocacy groups (including Plaintiff TCWN and Plaintiffs’ counsel, Southern Environmental Law Center). (Permit, Doc. 1-2 (JX 102) at PageID 92 & n.2; Letter from Environmental Integrity Project to TDEC (June 13, 2011), JX 150 at 1, 19-20; Trial Tr. (Vol. 2) at 59:4-8; 60:2-10.)

134. The environmental advocacy groups alleged that there were flows of CCR leachate from the Ash Pond Complex and the Non-Registered Site to the Cumberland River via embankment seeps and via seeps flowing into groundwater that is hydrologically connected to

the Cumberland River, and they requested that TDEC address these flows in the final permit.<sup>17</sup> (Letter from Environmental Integrity Project to TDEC (June 13, 2011), JX 150 at 15-16); Trial Tr. (Vol. 2) at 59:4-8; 60:2-10.)

135. TDEC, however, already was aware of the possibility of flows of CCR leachate from the Ash Pond Complex and the Non-Registered Site to the Cumberland River via embankment seeps and via seeps flowing into groundwater that is hydrologically connected to the Cumberland River.

136. For example, in 2010, before the draft permit was issued for comment, TDEC received an inquiry about the Gallatin Permit and seeps from the closed ash disposal area known as the Non-Registered Site. The inquiry resulted in a September 30, 2010 email from Robert Alexander, an experienced TDEC permit writer and the senior reviewer for the Gallatin Permit (Trial Tr. (Vol. 4) at 95:23-96:17), to Mr. Janjic in which Mr. Alexander stated:

***This closed area [Non-Registered Site] likely has some seeps, per the Stantec report, which the public/env groups may want us to address in future permits.***

My recommendation is that we say we're always interested in knowing about any discharges – maybe this person knows something we don't. . . .

***And for those seeps from ash pond discharges, our approach is not to include them on the Permit:***

- 1) ***unless*** the seeps are confined in a pipe as a point-source discharge;
- 2) ***because*** the flow is so small that it can't be measured, in most cases; and
- 3) ***because*** the WQ [water quality] effects of the low-volume seeps are considered *de-minimus* since most ash ponds are on large bodies of water.

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<sup>17</sup> The term “seeps” has been used by the parties and the Court throughout this litigation. “Seeps” refers to CCR leachate which the EPA has defined as “leachate from landfills or surface impoundments containing combustion residuals” and “composed of liquid . . . that has percolated through waste or other materials emplaced in a landfill, or that passes through the surface impoundment’s containment structure (e.g., bottom, dikes, berms).” 40 C.F.R. § 423.11(r).

(Email from Robert Alexander to Vojin Janjic, “Today’s Inquiry on TVA Gallatin NPDES & closed ash landfill” (Sept. 30, 2010), JX 137.)

137. Also, prior to TDEC’s reissuance of the Permit in 2012, EPA had issued guidance to assist NPDES “permitting authorities establish appropriate requirements for wastewater discharges from . . . coal combustion residual (CCR) impoundments at Steam Electric Power Plants,” (EPA June 7, 2010 Memorandum Attach. B, *Water Quality-Based Effluent Limits Coal Combustion Waste Impoundments*, at 2, Doc. 65-1 at PageID 2122),<sup>18</sup> and stated that the water quality permitting guidance “is intended to assist State and EPA authorities better address water quality impacts associated with discharges that manage CCRs” (*id.* at PageID 2123).

138. As recognized in EPA’s June 7, 2010 Guidance Memorandum:

- Electric power generating “facilities with combustion waste impoundments are *likely* to discharge wastewater via seepage;”
- “[s]eepage discharges are expected to be relatively minor in volume compared to other discharges at a facility;”
- permitting authorities should consider whether seepage discharges “must be addressed under the NPDES permit for the facility;” and
- permitting authorities should consider alternative regulatory practices for “discharges that cannot be regulated through traditional NPDES outfalls.”

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<sup>18</sup> This 2010 EPA memorandum was not admitted as a trial exhibit but is part of the case record as it is an attachment to TVA’s reply brief in further support of TVA’s motion for judgment on the pleadings (Doc. 65-1 at PageID 2122), and the environmental advocacy groups, including Plaintiff TCWN, cited EPA’s June 7, 2010 Guidance Memorandum in their written comments to TDEC regarding the Gallatin Permit. (Letter from Environmental Integrity Project to TDEC (June 13, 2011), JX 150 at 1 n.1.) The EPA memorandum also is available on EPA’s website at <https://www3.epa.gov/npdes/pubs/wqp-coalcombustionwasteimpoundments.pdf> (last visited Apr. 14, 2017), and therefore, is subject to judicial notice. *See United States v. BioPort Corp.*, 270 F. Supp.2d 968, 972 (W.D. Mich. 2003), *aff’d*, 388 F.3d 209 (6th Cir. 2004); *see also Ryan v. TVA*, No. 3:14-cv-356-TAV-HBG, 2015 WL 1962173, at \*3 & n.2 (E.D. Tenn. Apr. 30, 2015) (taking judicial notice of records and documents available on TVA’s public website); *Arvest Bank v. Byrd*, 814 F.Supp.2d 775, 787 & n.4 (W.D. Tenn. 2011).

(EPA June 7, 2010 Memorandum Attach. B at 2, Doc. 65-1 at PageID 2132.)

139. TDEC specifically acknowledged this EPA guidance in the Addendum to Rationale in TDEC's response to comments received from EPA Region 4. (JX 102 at PageID 94 ("The June 7, 2010 guidance describes the need for TBELs for FGD discharges, but did not do the same for ash pond discharges. In recent e-mails, you've indicated that EPA intended for TBEL guidance to apply to all coal combustion residual (CCR) discharges. We [TDEC] look forward to receiving written clarification on this point from EPA Headquarters.").)

140. Thus, when the Permit was reissued in 2012, it was known to TDEC that CCR impoundments were "likely" to discharge CCR leachate through seepage, and it was recognized that physical circumstances might prevent regulation of those seeps "through traditional NPDES outfalls." (Doc. 65-1 at PageID 2132; *accord* Email from Robert Alexander to Vojin Janjic, "Today's Inquiry on TVA Gallatin NPDES & closed ash landfill" (Sept. 30, 2010), JX 137.)

141. TDEC's Mr. Janjic confirmed that, at the time TDEC reissued the Permit in 2012, TDEC knew there were seeps from the ash ponds at Gallatin and "addressed them in the permit." (Trial Tr. (Vol. 2) at 55:10-13; *see also* Trial Tr. (Vol. 2) at 43:1-15, 55:10-56:14, 69:19-70:4.)

142. Mr. Janjic testified that "[t]here can be different kinds of seeps – and we're talking about with respect to this [Gallatin] facility only – that we are concerned with in terms of seeps that occur on the earthen berms of the ash pond. And those seeps can be varying in size and nature. There can be seeps that are larger, that are going to have more discernible amount of water coming through the seeps, and then seeps that are going to express themselves only as maybe a wet spot on the side of a berm." (Trial Tr. (Vol. 2) at 43:1-11.)

143. Mr. Janjic further explained that TDEC's "concern with seeps is twofold: One, the structural integrity of the impoundment, and, two, water quality, with structure integrity

being the primary concern of our agency [TDEC] under the circumstances and in this context.”  
(Trial Tr. (Vol. 2) at 44:24-45:3.)

144. The possibility of seeps from the Non-Registered Site to the Cumberland River also was disclosed affirmatively to TDEC during the public comment portion of the permitting process. (Letter from Environmental Integrity Project to TDEC (June 13, 2011), JX 150 at 15 (“The Phase I report noted seepage around the closed ash disposal area. These seeps may be discharging pollutants to the Cumberland River and should be addressed in the NPDES permit.”).)

145. Mr. Janjic confirmed that, when TDEC reissued the Permit in 2012, TDEC was aware that members of the public were raising issues about the alleged seepage discharges from the Non-Registered Site. (Trial Tr. (Vol. 2) at 59:4-8.)

146. Accordingly, TDEC explicitly acknowledged the environmental advocacy groups’ comments regarding seeps from the Non-Registered Site and the Ash Pond Complex, and TDEC reasonably contemplated this potential discharge when it reissued the Permit in 2012. (Permit, Doc. 1-2 (JX 102) at PageID 96-110; Trial Tr. (Vol. 2) at 58:16-59:8.)

147. Specifically, TDEC explained in the Addendum to Rationale that it had considered seeps, had experience with them from previous permits, and had addressed them in the draft permit’s inspection requirements:

TDEC has addressed *seeps* from ash pond dikes in the previous GAF permit and this draft permit under the requirement for annual dike inspections and recent revisions for these inspections. TDEC experience with these *seeps* is that additional pollutant loading, if possible, would be *de minimus*, due to these factors:

- The flow rate of *seepage* is so low as not to be measurable;
- *Seepage* is more similar to a nonpoint source discharge, as it is diffused over a wide area; and

- Quantification of any effects on the near-shore waters of Old Hickory Lake is impracticable.

(Permit, Doc. 1-2 (JX 102) at PageID 105; Trial Tr. (Vol. 2) at 58:16-59:8; 69:19-70:4.)<sup>19</sup>

148. TDEC further addressed the seeps under the Permit by requiring that regular seep inspections be conducted and that significant increases in seepage or seepage carrying sediment be addressed immediately (Permit, Doc. 1-2 (JX 102) at PageID 105),<sup>20</sup> and by requiring continued Reservoir Fish Assemblage Index sampling (*id.* at PageID 106, 145-53; Trial Tr. (Vol. 2) at 43:12-45:25, 55:10-16, 69:19-70:4).

149. Prior to reissuing the Gallatin Permit in 2012, TDEC was aware of the possibility of hydrologic flows from the Ash Pond Complex and the Non-Registered Site via groundwater that has a direct hydrologic connection to the Cumberland River because, in response to a question about leakage from the bottom of the wastewater treatment pond, Mr. Janjic testified that “[e]very impoundment that is not [a] lined impoundment is going to have a certain amount of seepage, and that amount of seepage is defined in our engineering criteria document. So, we realize that any earthen impoundment are going to have a certain amount of seepage.” (Trial Tr. (Vol. 2) at 48:16-24.)

150. Mr. Janjic confirmed that TDEC had been regulating TVA and TVA coal ash ponds for a long time and that TDEC has experience “deal[ing] with coal ash ponds.” Trial Tr. (Vol. 2) at 54:13-23.)

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<sup>19</sup> Discharges are de minimis if they “use less than five percent of the available assimilative capacity for the substance being discharged.” (Permit, Doc. 1-2 (JX 102) at PageID 71.)

<sup>20</sup> The Dike Inspections provisions of the Permit specify that “[d]aily inspections shall, at a minimum, include observations of . . . **seepage**.” (Permit, Doc. 1-2 (JX 102) at PageID 83.) The Permit requires TVA to inform TDEC within 24 hours of the discovery of “significant changes in **seeps**.” (*Id.*) And the Permit requires that “[c]hanges such as significant increases in **seepage** or **seepage** carrying sediment . . . should be addressed immediately.” (*Id.*)



151. The possibility of hydrologic flows from the Ash Pond Complex and the Non-Registered Site via groundwater that has a direct hydrologic connection to the Cumberland River was raised during the public comment portion of the permitting process. (Letter from Environmental Integrity Project to TDEC (June 13, 2011) JX 150 at 16; Trial Tr. (Vol. 2) at 56:25-60:10.)

152. The environmental advocacy groups asserted that “high concentrations of metals in groundwater are migrating to the Cumberland River and should be addressed in the NPDES permit.” (Permit, Doc. 1-2 (JX 102) at PageID 105; *see also* Trial Tr. (Vol. 2) at 59:9-17.)

153. TDEC responded:

***TDEC coordinates the regulation of metals in groundwater between the Divisions of Solid Waste Management (DSWM) and Water Pollution Control (WPC).***

DSWM is currently addressing analytical data from [groundwater monitoring] well 19 and replacement well 19R, which indicate beryllium, cadmium and nickel concentrations above maximum contamination levels (MCLs). Analysis results of samples from wells 19, 19R and 20 indicate releases of other metals above natural background concentrations.

Presently, DSWM regulates Gallatin Fossil Plant’s closed dry ash disposal area as a “Non-Registered-Site” (NRS 83-1324). Performance standards are commensurate with regulation of the disposal area as a Class II Industrial Landfill. On April 18, 2011, the DSWM approved TVA’s plan for assessment of groundwater contamination for the facility. Part of this plan has included the placement of additional wells and conducting a risk assessment. DSWM will utilize information derived from the assessment and require TVA to conduct appropriate planning and implementation of corrective measures, as needed.

The Division of WPC assesses the potential effects of groundwater loadings on surface waters, in addition to the ash pond discharge, however no estimates of groundwater loadings have been made at GAF. In other TVA ash pond locations, ***the groundwater seepage rate has been found to be a likely insignificant factor in affecting surface water as compared to the GAF ash pond discharge to the Lake of 27 MGD.***

Since it’s not feasible to measure potential groundwater effects in the depths of the Lake due to the large volume of mixing, assessment of the aquatic

community remains the only viable option. TVA has compiled data on Reservoir Fish Assemblage Index (RFAI) in Old Hickory Lake, upstream and downstream of GAF in 2001, -2, -3, -5, -7, and 2008, as described in the draft permit Rationale. *These data demonstrate that groundwater flow has not affected the maintenance of a balanced, indigenous population in the vicinity of the plant.*

*Accordingly*, DSWM continues to regulate groundwater conditions in the vicinity of the ash pond but *no NPDES permit conditions are established*.

(Permit, Doc. 1-2 (JX 102) at PageID 106; *see also* Trial Tr. (Vol. 2) at 59:9-60:10.)

154. TDEC determined that this potential discharge could not be quantified and the possibility thereof could not be empirically measured; however, TDEC reasonably contemplated that the possibility of groundwater flow and concluded that it would “be a likely insignificant factor in affecting surface water as compared to the GAF ash pond discharge to the Lake of 27 MGD [Million Gallons per Day].” (Permit, Doc. 1-2 (JX 102) at PageID 106.)

155. To support its determination that the collective effect of groundwater flow and the 27 MGD wastewater discharge through Outfall 001 was not significant, TDEC examined data from TVA’s decades of monitoring of aquatic species in the Cumberland River upstream and downstream of the Gallatin facility. (Permit, Doc. 1-2 (JX 102) at PageID 106.)

156. Therefore, although noting that TDEC’s “Division of Solid Waste Management continues to regulate groundwater conditions in the vicinity of the ash pond,” TDEC concluded that “no NPDES permit conditions are established” for “groundwater flow has not affected the maintenance of a balanced, indigenous [aquatic] population in the vicinity of the [Gallatin] plant.” (Permit, Doc. 1-2 (JX 102) at PageID 106.)

157. Mr. Janjic agreed with that conclusion. (Trial Tr. (Vol. 2) at 59:9-60:10.)

### **3. Plaintiffs’ Failure to Exhaust Administrative Remedies.**

158. On July 2, 2012, the day after the Permit became effective, Plaintiff TCWN appealed TDEC’s reissuance of the Gallatin Permit and specifically alleged that TDEC failed

properly to address flows of CCR leachate from the Ash Pond Complex and the Non-Registered Site via embankment (surface) seeps abutting the Cumberland River and via seeps flowing into groundwater that is hydrologically connected to the Cumberland River. (TCWN's Am. Pet. For Statutory Appeal (Aug. 3, 2012), TVA Ex. 8 ¶¶ 53, 72, 80.)

159. On December 19, 2013, TCWN voluntarily dismissed its seepage and groundwater claims in the permit appeal proceeding. (TCWN's Notice of Voluntary Dismissal of Certain Claims (Dec. 19, 2013), TVA Ex. 12 at PageID 1633-34.)

160. Having failed to exhaust their administrative remedies, Plaintiffs have no federal right of action to challenge TDEC's permitting decision in the guise of a CWA citizen suit. *Rose Acre Farms, Inc. v. N.C. Dep't of Env't & Natural Res.*, 131 F. Supp. 3d 496, 505 (E.D.N.C. 2015) (holding that “*state courts are the proper forums for resolving questions about state NPDES permits*”); *District of Columbia v. Schramm*, 631 F.2d 854, 863 (D.C. Cir. 1980); *see also Natural Res. Def. Council, Inc. v. Outboard Marine Corp.*, 702 F. Supp. 690, 694 (N.D. Ill. 1988) (“By failing to exhaust its available remedies, *OMC is forced to live with its permit terms*. . .”).

#### **4. TDEC's issuance of the Gallatin landfill permit in 2014.**

161. In 2014, TDEC issued TVA a solid waste permit for a new landfill at Gallatin, the North Rail Loop CCR Landfill (“NRL Landfill”). (Trial Tr. (Vol. 2) at 65:23-66:19; Trial Tr. (Vol. 3) at 32:6-9; Trial Tr. (Vol. 4) at 106:2-107:11.)

162. Leachate from the NRL Landfill is designed to go to Pond A of the Ash Pond Complex. (Trial Tr. (Vol. 2) at 66:7-14; Trial Tr. (Vol. 4) at 107:3-5.)

163. In 2014, when TDEC approved the use of the Ash Pond Complex for landfill leachate, TDEC knew there were seeps from the ponds (Trial Tr. (Vol. 2) at 66:11-14), and

according to Mr. Janjic, TDEC's NPDES permitting staff consulted "all along the way" with TDEC's solid waste permitting staff who were working on the permit for the NRL Landfill. (Trial Tr. (Vol. 2) at 66:15-19.)

164. This is consistent with TDEC's response to Comment 13 in the Permit's Addendum to Rationale that "TDEC coordinates the regulation of metals in groundwater between the Divisions of Solid Waste Management (DSWM) and Water Pollution Control (WPC)." (Permit, Doc. 1-2 (JX 102) at PageID 106; *see also* Trial Tr. (Vol. 2) at 59:9-60:10.)

165. In connection with the public comment process for the NRL Landfill, Plaintiffs' environmental consultant witness, Mark Quarles, submitted 101 separate comments to TDEC on behalf of Sierra Club. (Trial Tr. (Vol. 1) at 210:10-211:25.)

166. On June 30, 2014, TDEC responded to the public comments it received regarding the permit for the NRL Landfill, including those submitted by Mr. Quarles on behalf of Sierra Club, and those comments are public record.<sup>21</sup> (Trial Tr. (Vol. 1) at 216:11-25, 219:10-23.)

167. One of Mr. Quarles' comments criticized TDEC for allowing leachate from the NRL Landfill to be routed to the ash ponds because, although TVA plugged sinkholes in the ash ponds in the 1970s, Mr. Quarles alleged that TVA could not give assurances that other sinkholes would not begin to leak. (Trial Tr. (Vol. 1) at 219:10-23.)

168. TDEC responded to that comment stating that *the reason for plugging any of the sinkholes was to slow down the discharge rate of treated water to surface and subsurface water, not to stop the intended slow discharge.* (Trial Tr. (Vol. 1) at 219:13-23.)

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<sup>21</sup> TDEC's response to the public comments submitted in connection with the permit for the NRL Landfill are published on TDEC's website and are available on TDEC's Solid Waste Management Dataviewer, [http://environment-online.tn.gov:8080/pls/enf\\_reports/f?p=19035:34051::NO::P34051\\_PERMIT\\_ID:2361](http://environment-online.tn.gov:8080/pls/enf_reports/f?p=19035:34051::NO::P34051_PERMIT_ID:2361) (last visited Apr. 14, 2017.)

### III. Findings of Fact and Conclusions of Law – Ash Pond Complex Claims.

169. The Court previously dismissed all of Plaintiffs’ Ash Pond Complex claims “except insofar as they deal with . . . discharges from the Ash Pond Complex via hydrologic flows that are not seeps alone.” Mem. Op., Doc. 139 at PageID 5368.

170. As to the Ash Pond Complex, the Court found that Plaintiffs’ Complaint alleges “leaks based entirely or in part on faster-moving conduit flows, such as through sinkholes and fissures,” Mem. Op., Doc. 139 at PageID 5342, and that “[o]pen factual issues exist with regard to the extent of the discharges that fall within [this] . . . circumscribed categor[y],” Mem. Op., Doc. 139 at PageID 5367.

171. Thus, Plaintiffs have the burden of proving (1) the existence of the alleged non-seep conduit flows from the Ash Pond Complex via groundwater that is hydrologically connected to the Cumberland River; (2) that the alleged flows are prohibited discharges under the CWA; and that (3) the alleged flows are beyond that which TDEC reasonably contemplated when TDEC reissued the Gallatin Permit in 2012. *See* 33 U.S.C. § 1311(a) (excepting from CWA liability all discharges that are in compliance with an NPDES permit); *EPA v. Cal. ex rel. State Water Res. Control Bd.*, 426 U.S. 200, 223 (1976) (“[U]nless the plaintiff can show violation of the permit condition, violation of the [CWA] cannot be established.”).<sup>22</sup>

172. Plaintiffs must prove five elements to establish that the alleged flow is covered under the CWA: (1) a pollutant must be (2) added (3) to navigable waters (4) from (5) a point source. Mem. Op., Doc. 139 at PageID 5366; *Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 583 (6th Cir. 1988) (discussing the requirements for proving a violation of 33 U.S.C. § 1311(a)).

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<sup>22</sup> *See* TVA’s Burden of Proof Brief (Doc. 231-1).

173. The wastewater conveyance system used at the Gallatin facility to sluice CCR material from the plant to the Ash Pond Complex contains “industrial . . . waste discharged into water” and, thus, meets the CWA’s definition of “pollutant.” 33 U.S.C. § 1362(6).

174. The Cumberland River is a navigable water of the United States. (J. Stip., Doc. 226 (JX 278) at PageID 8325 ¶ 2.)

175. The Plaintiffs allege that the Ash Pond Complex itself is the point source (Trial Tr. (Vol. 3) at 63:15-20; *see also* Compl., Doc. 1 at PageID 38 ¶ 152), and there is no dispute that the Ash Pond Complex is a permitted component of the active wastewater conveyance system at the Gallatin facility. *See* Mem. Op., Doc. 139 at PageID 5328-29.

176. Accordingly, although the Court concludes that the Ash Pond Complex meets the CWA’s definition of “point source,” this conclusion alone is not sufficient to establish TVA’s potential liability because it is undisputed that the Ash Pond Complex is a permitted point source — TVA has a valid NPDES permit authorizing it to discharge up to 27 million gallons of wastewater per day from the Ash Pond Complex to the Cumberland River. (Permit, Doc. 1-2 (JX 102) at PageID 102-06, 121-22; *see also* Trial Tr. (Vol. 3) at 63:21-23 (THE COURT: Well, let’s put the Ash Pond Complex aside. Because I think that - - you have to deal with the permit.”))

177. Therefore, to determine whether there has been a prohibited discharge under the CWA, Plaintiffs must prove that non-seep conduit flows from the Ash Pond Complex (such as through sinkholes and fissures) actually and physically “*add*” pollutants to the Cumberland River via hydrologically connected groundwater. *See Sierra Club v. BNSF Ry. Co.*, No. C13-967-JCC, 2016 WL 6217108, at \*7 (W.D. Wash. Oct. 25, 2016) (“Based on the statutory language, Plaintiffs must do more than point to a statutorily defined point source to prove that there was

actual addition of coal to the waters. They must also prove that there was a discharge to navigable waters.”).

178. The CWA “does not define what constitutes the ‘addition’ of a pollutant” for purposes of 33 U.S.C. § 1362(12). *Nat’l Wildlife Fed’n v. Gorsuch*, 693 F.2d 156, 174–75 (D.C. Cir. 1982); *see also* National Pollutant Discharge Elimination System (NPDES) Water Transfers Rule, 73 Fed. Reg. 33697, 33701 (June 13, 2008) (“‘Addition’ is a general term, undefined by the statute.”).

179. Deferring to the EPA’s construction of the term, the Sixth Circuit has held that “there can be no addition unless a source ‘physically introduces a pollutant into water from the outside world.’” *Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 584 (6th Cir. 1988) (quoting *Nat’l Wildlife Fed’n v. Gorsuch*, 693 F.2d 156, 175 (D.C. Cir. 1982)).

180. In short, the alleged point source must cause the movement of the pollutant to the navigable water. *Sierra Club v. BNSF Ry. Co.*, No. C13-967-JCC, 2016 WL 6217108, at \*8 (W.D. Wash. Oct. 25, 2016) (“Although the coal may be deposited by a statutorily defined point source on the ground near the tracks and move from the tracks into the water, it is not clear that the alleged point source, BNSF trains, *caused* the coal to move to the water.”) (italics in original).

181. The crux of Plaintiffs’ Ash Pond Complex claims is that “there is a direct hydrologic connection between the” Ash Pond Complex and the Cumberland River via groundwater and that “[t]his is not just slow pore-space seepage of contaminants, but also conduit flow through fissures and sinkholes that provides rapid connectivity with little to no pollutant attenuation.” (Compl., Doc. 1 at PageID 38 ¶ 152.)

182. This Court previously recognized that “directness of hydrologic connection is generally very difficult to define or demonstrate on a site-specific basis,” *Ass’n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*17 n.16 (M.D. Tenn. Apr. 11, 2011) (internal quotation marks omitted), and “[a] general hydrological connection among all waters will be insufficient” to satisfy the fact-specific, site-intensive inquiry required to prove a direct hydrological connection. *Id.* at \*18.

183. It is not sufficient for Plaintiffs to prove each of these elements in isolation; rather, Plaintiffs must (1) ““prove a link between contaminated ground waters and navigable waters”” and (2) ““trace pollutants from their source to surface waters.”” *Ass’n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*18 (M.D. Tenn. Apr. 11, 2011). (quoting *Mutual Life Ins. Co., v. Mobil Corp.*, No. Civ A 96-CV1781, 1998 WL 160820, at \*3 (N.D.N.Y Mar. 31, 1998)).<sup>23</sup>

**A. The Joint Map.**

184. On January 18, 2017, the Court ordered the parties to “agree upon a map of the Non-Registered Site and Ash Pond Complex to be used as a visual aid at trial. The map should, insofar as possible, identify the site of all leaks, seeps, or discharges on which Plaintiffs seek to premise alleged Clean Water Act violations which shall be consistent with the Court’s Order and Memorandum (Doc. Nos. 139 and 140).” (Doc. 208 at PageID 7909.)

185. The Court noted, however, that “[s]uch identification will be made without waiver or prejudice with regard to any challenge, by TVA, to either the existence of the alleged

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<sup>23</sup> At trial, the Court discussed with Plaintiffs’ counsel whether Plaintiffs had proved the elements necessary to satisfy Judge Haynes’ test for establishing a direct hydrological connection. (Trial Tr. (Vol. 3) at 70:18-71:9.)



leak/seep/discharge or whether that leak/seep/discharge is subject to any defense, including but not limited to the diligent prosecution bar or permit shield doctrine.” (Doc. 208 at PageID 7909.)

**1. Plaintiffs’ attempt to recast their seep allegations which the Court dismissed on September 9, 2016.**

186. In its September 9, 2016 Memorandum Opinion (Doc. 139), the Court ruled that this Federal citizen enforcement action overlaps with the State Enforcement Action to the extent that the allegations concern “leaks that can be characterized as seeps” but does not overlap to the extent that the Federal action alleges “leaks based entirely or in part on faster-moving conduit flows, such as through sinkholes and fissures.” (*Id.* at PageID 5342.)

187. The Court, therefore, dismissed Plaintiffs’ Claims A, C, D, E.b, E.c., E.d, and E.e: “*except* insofar as they deal with . . . discharges from the Ash Pond Complex via hydrologic flows *that are not seeps alone*.” (*Id.* at PageID 5368.)<sup>24</sup>

188. In its analysis, the Court recognized that, as Plaintiffs have used the term throughout this litigation, a “[s]eep . . . refers to ‘slow pore-space seepage of contaminants,’ as opposed to ‘conduit flow through fissures and sinkholes that provides rapid connectivity with little or no pollutant attenuation.’” (Doc. 139 at PageID 5332 (quoting Compl. ¶ 152).)

189. The Court found that “Plaintiffs claim to have documented four additional seeps that TVA had not previously identified, which Plaintiffs have dubbed Seeps A, B, C, and D. (*Id.* citing Compl. ¶ 118.)

190. As reflected on the Joint Map and notwithstanding the Court’s ruling, Plaintiffs have attempted to preserve their seep claims by removing the word “seep” from the description

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<sup>24</sup> In its September 9, 2016 Memorandum Opinion, the Court “concluded that the diligent prosecution bar prevents the Plaintiffs from bringing claims based solely on seeps alone from the Ash Pond Complex.” Mem. Op., Doc. 139 at PageID 5357 n.7.

of the locations at which Plaintiffs claim there are unlawful discharges. For example, the note on the Joint Map states that, “[w]ith regard to labels on previous maps identifying sampling locations conducted by the environmental groups: APC-1 = Seep B; APC-2 = Seep A; ES-1 = Seep D; ES-2 = Seep C.” (Joint Map, Doc. 220-1 (JX 279).)

191. Nevertheless, as to the Ash Pond Complex sampling locations depicted on the Joint Map, Plaintiffs have failed to meet their burden of proof to show (1) that there are prohibited discharges under the CWA at these sampling locations; (2) that there is evidence of flows at these sampling locations which are beyond that which TDEC reasonably contemplated when TDEC reissued the Gallatin Permit in 2012; and (3) that, assuming arguendo, the alleged discharges at these sampling locations survive the Court’s application of the CWA’s diligent prosecution bar.

192. Moreover, Plaintiffs’ environmental consultant witness, Mr. Quarles, provided no testimony or evidence about how long the CCR materials found in the samples he gathered had been in the Cumberland River or how the CCR materials came to be in the Cumberland River:

Q. Your report does not state how long the materials obtained from your samples had been in the river, though, does it?

A. It does not.

Q. Okay. And your report does not state how long the materials obtained from your Ash Pond Complex samples had been in the river, does it?

A. Does not.

Q. *And you further state in your report that, quote, your investigation did not determine how the waste reached the Cumberland River, correct?*

A. *Correct.*

Q. *For both your Ash Pond Complex and NRS samples, correct?*

A. *Correct.*

(Trial Tr. (Vol. 1) at 186:2-15.)

2. **Plaintiffs' sampling locations ES 1, ES 2, GT 1, GT 2, GT 6, and GT 7 are seep locations that have been dismissed pursuant to the diligent prosecution bar, have not been distinguished from the claims at issue in the State Enforcement Action, and/or do not show evidence of coal ash contamination.**

193. Sampling locations ES 1 and ES 2 are located on the east side of the Odom's Bend Peninsula (Joint Map, Doc. 220-1 (JX 279)), and at trial, Mr. Quarles testified that ES 1 and ES 2 are examples of "diffuse flow springs" (i.e., slow moving, non-conduit flow) (Trial Tr. (Vol. 1) at 186:16-187:14).

194. Mr. Quarles testified that ES 1 is in the same location as that which is identified in the Complaint as Seep D and that ES 2 is in the same location as that which is identified in the Complaint as Seep C. (Trial Tr. (Vol. 1) at 187:15-24; *compare* Joint Map, Doc. 220-1 (JX 279) *with* Compl. Ex. 6, Doc. 1-8.)

195. Mr. Quarles testified that ES 1 is in the same location as that which is identified in the State Enforcement Action as Seep D and that ES 2 is in the same location as that which is identified in the State Enforcement Action as Seep C. (Trial Tr. (Vol. 1) at 188:20-189:14; *compare* Joint Map, Doc. 220-1 (JX 279) *with* Compl. In Intervention Ex. 1, JX 152, Doc. 13-8 at PageID 391.)

196. Also, as the Court observed during the colloquy on TVA's Rule 52(c) motion, Plaintiffs' proof did "not segregate[] out the ten seeps that are part of the State action" (Trial Tr. (Vol. 3) at 68:18-20), from the discharge(s) alleged in this citizen suit at the ES 1, ES 2, GT 2, GT 6, and GT 7 seep/sampling locations. (*See* Trial Tr. (Vol. 3) at 65:3-71:24.)

197. Plaintiffs' geochemistry witness, Dr. Vengosh, testified that boron is a reliable indicator of coal ash pollution and that an elevated concentration of boron is characteristic of

coal ash wastewater. (Trial Tr. (Vol. 2) at 134:2-134:3, 138:16-22, 142:15-143:21.) Although Dr. Vengosh relied to a lesser extent on strontium data, he testified that, according to his research, boron is shown to be universally applicable for “tracing CCR contaminants in the environment” but that the application of Strontium isotopes is more restricted to specific cases where the strontium isotopic composition of the background water is different from that of CCRs.”<sup>25</sup> (Trial Tr. (Vol. 2) at 156:21-157:22.)

198. As to Seep D, Dr. Vengosh testified that it is in the same location as his GT-7 sample (Trial Tr. (Vol. 2) at 155:2-7), and Dr. Vengosh concluded that the boron concentration of GT-7 showed that it is not contaminated by coal ash. (Trial Tr. (Vol. 2) at 151:19-152:1, 155:11-14.)

199. As to Seep C, Dr. Vengosh testified that it is in the same location as his GT-6 sample (Trial Tr. (Vol. 2) at 155:8-10), and Dr. Vengosh concluded that the boron concentration of GT-6 showed that it is not contaminated by coal ash. (Trial Tr. (Vol. 2) at 151:10-22, 155:15-17.)

200. Dr. Vengosh also testified that his sample GT-2, which is adjacent to Pond E on the west side of Odom’s Bend Peninsula (Doc. 220-1), was not contaminated.<sup>26</sup> (Trial Tr. (Vol. 2) at 152:5-153:25.)

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<sup>25</sup> Dr. Vengosh conceded that “[w]hen you’re talking about groundwater, *we[‘re] talking about indicators, about the boron and strontium and the isotopic ratios that, perhaps by themselves [sic] they’re not [a] harm to human health or the environment*, but they are an indicator for the source of contamination.” (Trial Tr. (Vol. 2) at 144:1-5.)

<sup>26</sup> Dr. Vengosh’s GT-1 sample is not relevant because it was obtained from NPDES outfall (Outfall 001) (Trial Tr. (Vol. 2) at 152:25-153:7; Doc. 220-1), and there are no claims in this lawsuit for exceedances at Outfall 001.

201. Therefore, the Court concludes that, based on Dr. Vengosh's testimony, Plaintiffs have failed to prove the "addition of a pollutant" because "there can be no addition unless a source physically introduces a pollutant into water from the outside world." *Nat'l Wildlife Fed'n v. Consumers Power Co.*, 862 F.2d 580, 584 (6th Cir. 1988) (internal quotation marks omitted); *Sierra Club v. BNSF Ry. Co.*, No. C13-967-JCC, 2016 WL 6217108, at \*8 (W.D. Wash. Oct. 25, 2016).

**3. Plaintiffs' sampling locations APC 1, APC 2, APC 3, APC 4, GT 3, and GT 4 are seep locations that have been dismissed pursuant to the diligent prosecution bar, have not been distinguished from the claims at issue in the State Enforcement Action, and have not been shown to exceed TDEC's reasonable contemplation.**

202. Sampling locations APC 1, APC 2, and APC 2 are located on the west side of the Odom's Bend Peninsula (Doc. 220-1), and at trial, Mr. Quarles testified that these sampling locations were identified as Seep A and Seep B in the Complaint and in his Rule 26(a)(2) report. (Trial Tr. (Vol. 1) at 187:25-188:19; *compare* Joint Map, Doc. 220-1 (JX 279) *with* Compl. Ex. 6, Doc. 1-8.)

203. Mr. Quarles also testified that sampling locations APC 1, APC 2, APC 3, and APC 4 are in the same location as that which is identified in the State Enforcement Action as Seep C. (Trial Tr. (Vol. 1) at 188:20-189:24; *compare* Joint Map, Doc. 220-1 (JX 279) *with* Compl. In Intervention Ex. 1, JX 152, Doc. 13-8 at PageID 391.)

204. As reflected on the Joint Map, Doc. 220-1 (JX 279), Seeps 4 and 5 are in the same location Plaintiffs' seep/sampling locations APC 1, APC 2, APC 3, APC 4, GT 3, and GT 4; are among the ten seeps identified in the State's Complaint in the State Enforcement Action (Doc. 13-5 at PageID 330 ¶ 37; *see also* Compl. In Intervention, JX 152, Doc. 13-8 at PageID

391); and are documented in the June 25, 2010 Gallatin Seepage Action Plan (JX 184 Appx. A Sheet 3 of 3, Appx. C-1).

205. TVA's geotechnical engineer, Mr. Lang, testified that he was familiar with Plaintiffs' seep/sampling locations depicted on the bottom-left inset to the Joint Map, Doc. 220-1 (JX 279). (Trial Tr. (Vol. 3) at 86:24-87:6.)

206. Mr. Lang testified that Seep 5 is "standard seepage that we've seen around the ash complex" (Trial Tr. (Vol. 3) at 91:10-15), and that the source of this seepage is water from "within the [ash] pond, as well as infiltration from rainwater" through the dike of Pond E (Trial Tr. (Vol. 3) at 91:16-20, 92:9-17, 140:17-142:20).

207. Mr. Lang testified that there is no evidence to support Plaintiffs' claims that this is seepage of groundwater. (Trial Tr. (Vol. 3) at 91:21-25.)

208. Mr. Lang further testified that Seep 5 was repaired in January of 2015 (Trial Tr. (Vol. 3) at 90:12-92:2, 140:17-142:20), which is three months before this citizen suit was filed, and that Seep 5 repair area is "100 to 200 foot [in] length" (Trial Tr. (Vol. 3) at 126:18-127:13).<sup>27</sup>

209. The AECOM Seepage Investigation and Recommendation contains a photograph of the Seep 5 area, a detailed description of the Seep 5 area, and documents the January 2015 repair of the Seep 5 area.<sup>28</sup> (JX 157 at 6.)

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<sup>27</sup> Appendix C to the Gallatin Seepage Action Plan is the GAF Seepage Log, and it shows that Seep 5 was logged on April 13, 2010, and is approximately "10' to 15' wide by 100' to 200' long." (JX 184 Appx. C-1.)

<sup>28</sup> The AECOM Seepage Investigation and Recommendation shows that Seep 4 is a non-flowing wet area that continues to be monitored by TVA. (JX 157 at 5.)

210. The direct testimony state of Plaintiffs' witness, Barry Sulkin, contains a photograph of the January 2015 repair to Seep 5 discussed by Mr. Lang (Sulkin DT, Doc. 227-3 (Pls. Ex. 19) at PageID 8467), and Mr. Sulkin testified that this repair is in the same area as Plaintiffs' seep/sampling locations APC 1, APC 2, and APC 3 (Sulkin DT, Doc. 227-3 (Pls. Ex. 19) at PageID 8464-67 ¶¶ 62-70).<sup>29</sup>

211. None of Plaintiffs' witnesses distinguished the repaired Seep 5, which is one of the ten seeps identified in the State Enforcement Action, with Plaintiffs' seep/sampling locations APC 1, APC 2, APC 3, APC 4, GT 3, or GT 4.

212. Also, as the Court observed during the colloquy on TVA's Rule 52(c) motion, Plaintiffs' proof did "not segregate[] out the ten seeps that are part of the State action" (Trial Tr. (Vol. 3) at 68:18-20), from the discharge(s) alleged in this citizen suit at the APC 1, APC 2, APC 3, and APC 4 seep/sampling locations. (*See* Trial Tr. (Vol. 3) at 65:3-71:24.)

213. Moreover, Plaintiffs failed to come forward with any evidence showing that the seepage at these seep/sampling locations exceeds the volume of seepage that TDEC reasonably contemplated when it reissued the Permit in 2012. (Permit, Doc. 1-2 (JX 102) at PageID 105; Trial Tr. (Vol. 2) at 58:16-59:8; 69:19-70:4.)

214. According to Mr. Janjic, a seep that is not authorized by the Permit is a seep that discharges water in a "discernible flow" that is "more than just a wet spot on the ground." (Trial Tr. (Vol. 2) at 46:9-23.) In other words, a seep is not permitted to have "[a] flow of water that you can see the actual water flowing." (*See* Trial Tr. (Vol. 2) at 46:25-47:1.)

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<sup>29</sup> Mr. Sulkin testified that, although he had previously described these sampling locations as seeps, the word seep does not appear anywhere in his direct testimony statement (Trial Tr. (Vol. 2) at 114:20-115:16); however, Mr. Sulkin conceded that he uses the terms "seep" and "discharge" interchangeably (Trial Tr. (Vol. 2) at 115:6-16).

215. Plaintiffs did not prove the existence of a single, unrepaired seep at the Ash Pond Complex that has an ongoing discernible flow.

216. Instead, the evidence adduced at trial shows, at most, that Plaintiffs' seep/sampling locations APC 1, APC 2, APC 3, APC 4, GT 3, and GT 4 are within the scope of the de minimis seepage reasonably contemplated by TDEC when it reissued the Permit in 2012 because (1) there was no evidence of a measurable flow from these seep/sampling locations; and (2) as explained by Mr. Lang regarding the repaired Seep 5 area, the seepage was diffused over a wide area. (Permit, Doc. 1-2 (JX 102) at PageID 105; Trial Tr. (Vol. 2) at 58:16-59:8; 69:19-70:4.)

**B. Plaintiffs Failed to Prove the Existence of Conduit Flows (such as through sinkholes and fissures) from the Ash Pond Complex to the Underlying Groundwater.**

217. On the Joint Map, Plaintiffs inserted a disclaimer stating that “[t]his map does not depict sinkholes and fissures that Conservation Groups claim are discharging coal ash waste.” (Doc. 220-1 (JX 279).)

218. At trial, Plaintiffs did not identify the location of a single sinkhole or fissure through which there is an actual, ongoing discharge of coal ash waste.

219. Further, Plaintiffs' witnesses failed (1) to “prove a link between contaminated ground waters and navigable waters” and (2) to “trace pollutants from their source to surface waters.” *Ass’n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*18 (M.D. Tenn. Apr. 11, 2011) (internal quotation marks omitted).



**1. The failure of Mr. Quarles' testimony.**

220. Mr. Quarles, testified that in 2014 and 2015 he took the samples along the shoreline of the Ash Pond Complex and the Non-Registered Site (Quarles DT, Doc. 227-2 (Pls. Ex. 18) at PageID 8407-10, Joint Map, Doc. 220-1 (JX 279)); however, Mr. Quarles provided no testimony or evidence about how long the CCR materials found in the samples he gathered had been in the Cumberland River or how the CCR materials came to be in the Cumberland River:

Q. Your report does not state how long the materials obtained from your samples had been in the river, though, does it?

A. It does not.

Q. Okay. And your report does not state how long the materials obtained from your Ash Pond Complex samples had been in the river, does it?

A. Does not.

Q. *And you further state in your report that, quote, your investigation did not determine how the waste reached the Cumberland River, correct?*

A. *Correct.*

Q. *For both your Ash Pond Complex and NRS samples, correct?*

A. *Correct.*

(Trial Tr. (Vol. 1) at 186:2-15.)

**2. The failure of Dr. Groves' testimony.**

221. Although Dr. Groves conceded that he has never been to Gallatin Fossil Plant (Trial Tr. (Vol. 1) at 53:12-18), he nevertheless opined that because of the presence of karst features, "the bottom of the ash pond is more like a colander than a liner" (Trial Tr. (Vol. 1) at 33:5-10), and that "because there were unrepaired sinkholes identified by TVA [in the 1970s] under the Ash Pond Complex, there remains a direct hydrologic connection between the Ash Pond Complex and the Cumberland River" (Trial Tr. (Vol. 1) at 44:14-20).

222. Dr. Groves failed to identify a single sinkhole, fissure, or other karst feature through which there is actual, ongoing leakage of coal ash waste, which renders this opinion both conclusory and speculative.

223. Also, despite his colander analogy, Dr. Groves conceded that there is evidence of clay deposits between the bottom of the ash pond and the top of the rock at the Ash Pond Complex. (Trial Tr. (Vol. 1) at 65:2-69:1.)

224. In fact, Stantec concluded in 2010 that “[t]he thickness of the native [clay] soils above bedrock across the [ash] pond complex range from as little as about one foot or less to as much as about 30 feet” and that “[m]ost thicknesses are from about 10 to 25 feet.” (JX 67 at 12; *see also* Trial Tr. (Vol. 1) at 66:4-71:16.)

225. Dr. Groves did not mention the 2010 Stantec data in his Rule 26(a)(2) reports or in his direct testimony statement (Trial Tr. (Vol. 1) at 68:23-69:1), and Dr. Groves ignored Stantec’s 2010 conclusion that, other than a 2010 sinkhole that occurred outside of the Ash Pond Complex, “Gallatin has not experienced any known additional karst-related problems within the ponds in recent years” (JX 67 at 8) (Trial Tr. (Vol. 1) at 69:2-71:8).

226. Dr. Groves’ opinions are based on his “*assum[ption]*” that coal ash wastewater moves directly into the subsurface under the Ash Pond Complex to the Cumberland River, just as water moved through the bottom of Sinking Creek to the Cumberland River before it held the Ash Pond Complex.” (Trial Tr. (Vol. 1) at 40:14-20.)

227. However, Mr. Quarles contradicted Dr. Groves assumption and testified that Dr. Groves placed the “axis of the historic Sinking Creek” in the wrong place. (Trial Tr. (Vol. 1) at 184:12-185:1.)

228. Significantly, when asked whether he could say for certain what amount of water is going out the bottom of the Ash Pond Complex, Dr. Groves testified:

A. *No*, it's possible to do. It *could be done* using something called a hydrologic budget, and there's been a lot of discussion about that, and *so far one has not been produced.*"

(Trial Tr. (Vol. 1) at 50:13-19.)

229. Dr. Groves testified (and wrote in the various publications he has authored) that dye tracer studies, water budgets, and hydrograph analysis are among the most important tests utilized by karst hydrogeologists in the field; however, Dr. Groves conceded that he has not performed a water budget, has not conducted dye tracer studies, and has not conducted any field investigations at the Gallatin facilities (Trial Tr. (Vol. 1) at 80:16-86:18):

THE COURT: But if you had performed some of those tests in your publication, then you would be able to testify here today, "based on my testing," that was what your conclusions were - -

. . . .

THE COURT: That's not my question. If you had performed some of the testing, the dye, for example, here - - if you had done that here, you would be able to testify from your own knowledge that these things are connected - - from your own testing.

THE WITNESS: Well, yes.

THE COURT: That would presumably have confirmed one way or the other the conclusions you have reached.

THE WITNESS: Yes. . . .

(Trial Tr. (Vol. 1) at 101:17-102:8).

### **3. The failure of Mr. Sulkin's testimony.**

230. Although Mr. Sulkin testified that he is not a karst expert, a geologist, a hydrologist, or an engineer and that he is relying on the opinions of Mr. Quarles and Dr. Groves for karst and geological issues (Trial Tr. (Vol. 2) at 112:22-114:1), Mr. Sulkin nevertheless

opined that “TVA is discharging pollutants from the Ash Pond Complex at TVA’s Gallatin facility directly into the groundwater through various fissures and sinkholes in the karst landscape of the Ash Pond Complex” (Trial Tr. (Vol. 2) at 75:8-12).

231. In addition to rendering an opinion that requires expertise which he admittedly does not possess, Mr. Sulkin failed to identify a single sinkhole, fissure, or other karst feature through which there is an actual, ongoing discharge of coal ash waste. Thus, his opinion (in scientific fields in which he lacks the requisite expertise) should be given no weight because it is both conclusory and speculative.

232. Although Mr. Sulkin discussed various MCL exceedances in groundwater and surface water samples, TVA’s hydrogeologist, Ms. Perry, confirmed that “[t]he *exceedances don’t tell us anything about conduit flow versus seepage flow.*” (Trial Tr. (Vol. 4) at 87:24-88:13.) Ms. Perry’s testimony on this point was unrebutted.

233. Mr. Sulkin further opined “that TVA is discharging pollutants from the Ash Pond Complex at TVA’s Gallatin facility directly into the groundwater through a large historical drainage channel associated with Sinking Creek. . . . And this groundwater at the Sinking Creek site is hydrologically connected with the Cumberland River.” (Trial Tr. (Vol. 2) at 74:25-75:7.)

234. However, according to Mr. Quarles, Mr. Sulkin (like Dr. Groves) is wrong about the location of the historic drainage outlet of Sinking Creek. (Trial Tr. (Vol. 1) at 183:24-184:11.)

#### **4. The failure of Dr. Vengosh’s testimony.**

235. Dr. Vengosh testified that, in his opinion, “coal ash from seeps and groundwater conduits has contaminated water at the Gallatin Fossil Plant and is discharging to surface water

and into groundwater at the site locations other than Outfall 001.” (Trial Tr. (Vol. 2) at 133:22-134:1.)

236. However, when asked whether he had disclosed an opinion about groundwater conduits in his Rule 26(a)(2) report, Dr. Vengosh conceded that he did not “talk[] about conduit [in] that report at the time.”<sup>30</sup> (Trial Tr. (Vol. 2) at 160:11-23.)

237. Accordingly, pursuant to Local Rule 39.01(c) and Federal Rule of Civil Procedure 37(c)(1), the Court will disregard Dr. Vengosh’s statement related to groundwater conduits. *See, e.g., United States ex rel. TVA v. 1.72 Acres of Land In Coffee Cnty., Tennessee*, 821 F.3d 742, 752 (6th Cir. 2016) (“Federal Rule of Civil Procedure 37(c)(1) requires absolute compliance with Rule 26(a), that is, it mandates that a trial court punish a party for discovery violations in connection with Rule 26 unless the violation was harmless or is substantially justified.” (quoting *Roberts ex rel. Johnson v. Galen of Virginia, Inc.*, 325 F.3d 776, 782 (6th Cir.2003))).

## **5. The failure of Mr. Dotson’s testimony.**

238. Mr. Dotson is a karst hydrogeologist employed by TDEC, and he testified that he has visited the Gallatin site approximately “20 to 30 times” in the six months leading up to the trial (Trial Tr. (Vol. 3) at 6:16-25) in connection with the ongoing work under being performed pursuant to the EIP and the Agreed Temporary Injunction in the State Enforcement Action (Trial Tr. (Vol. 3) at 4:8-7:13, 12:24-18:5).

239. Mr. Dotson testified that, based on his observation, the groundwater level is *not* consistent with the surface water level of Ash Pond E. (Trial Tr. (Vol. 3) at 22:11-14.)

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<sup>30</sup> This new “opinion” was not contained in Plaintiffs’ Rule 26(a)(2) disclosures for Dr. Vengosh and only appeared after the Court’s decision on September 9, 2016; therefore, TVA timely moved to exclude it. (Docs. 179, 180.)

240. This is consistent with the testimony of TVA's hydrogeologist, Ms. Perry, who testified that the water in the Ash Pond Complex and the dikes *is not part of the groundwater system*, and water in these locations *is not representative of the groundwater system* at the Ash Pond Complex. (Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8685; Trial Tr. (Vol. 4) at 40:11-41:17; *see also* Trial Tr. (Vol. 3) at 110:8-17; 114:3-25.)

241. Ms. Perry further explained that the water level in a well reflects the hydraulic head conditions in the bedrock aquifer where the well is screened and, thus, does show not the physical presence of groundwater inside the ash ponds.<sup>31</sup> (Trial Tr. (Vol. 4) at 36:6-40:16, 60:16-63:19, 84:11-85:15.) The Court asked Ms. Perry a specific question about this issue, and Ms. Perry explained that groundwater well data shows hydraulic head conditions in the bedrock underneath the pond (i.e., inside the bedrock beneath the Ash Pond Complex). (Trial Tr. (Vol. 4) at 63:5-19.)

242. Significantly, Mr. Dotson testified that, although there is evidence of a hydrologic connection between the groundwater and the Cumberland River (including conduit flow) he does not know if there is a conduit running through the Ash Pond Complex (i.e. a direct hydrologic connection between the water in the Ash Pond Complex and the groundwater):

Q. Would that conduit run through the Ash Pond Complex then?

....

A. *I don't know.*

(Trial Tr. (Vol. 3) at 31:3-11.)

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<sup>31</sup> *See also* Trial Tr. (Vol. 4) at 38:6-40:16 (discussing the erroneous depiction of groundwater elevation in Mr. Quarles' conceptual model (JX 141) and characterizing Mr. Quarles' conceptual model of the Ash Pond Complex as "*imaginary*").

**C. TVA's Unrebutted Proof Shows the Absence of Conduit Flows (such as through sinkholes and fissures) from the Ash Pond Complex to the Underlying Groundwater.**

243. In contrast to Plaintiffs' lack of proof, TVA introduced actual physical evidence at trial that tends to establish the absence of conduit flows (such as through sinkholes and fissures) from the Ash Pond Complex to the underlying groundwater, in particular the testimony from TVA's karst engineer, Dr. Walter Kutschke,<sup>32</sup> and from TVA's hydrogeologist, Elizabeth Perry.<sup>33</sup>

244. In 2015, to better understand and monitor the groundwater system in the vicinity of the Ash Pond Complex, TVA's contractor, AECOM, drilled numerous borings in the Carters Limestone, Lebanon Limestone, and Ridley Limestone. (Trial Tr. (Vol. 3) at 189:18-190:14; Trial Tr. (Vol. 4) at 43:12-21; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8595; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8689.)

245. None of the 2015 borings encountered open, cavernous conditions indicative of sinkhole development or potential conduit flow. (Trial Tr. (Vol. 3) at 189:24-190:14; Trial Tr. (Vol. 4) at 43:19-21; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8595; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8689.)

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<sup>32</sup> Dr. Kutschke testified that he has been involved with AECOM's work at Gallatin since 2011, that he has been onsite at Gallatin more than 20 times, and that he currently serves as lead karst engineer for TVA's ongoing work at Gallatin to comply with the CCR Rule and the Agreed Temporary Injunction in the State Enforcement Action. (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8585-86.)

<sup>33</sup> Ms. Perry testified that she serves as the lead hydrogeologist at Gallatin, is responsible for the groundwater aspects of the project at Gallatin, and is the leader of a team of geologists, hydrogeologists, and engineers who collectively have decades of karst experience. (Trial Tr. (Vol. 4) at 34:6-23; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8678.)

246. None of the 2015 borings indicated the presence of CCR material for borings drilled outside of CCR storage units. (Trial Tr. (Vol. 3) at 189:18-24; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8595.)

247. Similarly, the report of Stantec's 2010 geotechnical exploration did not note the presence of active karst features such as sinkholes, conduits, or fissures. (JX 67 at 8.) In fact, Stantec documented evidence of significant clay deposits between the bottom of the ash pond and the top of the rock at the Ash Pond Complex. (JX 67 at 12 ("The thickness of the native [clay] soils above bedrock across the [ash] pond complex range from as little as about one foot or less to as much as about 30 feet. Most thicknesses are from about 10 to 25 feet."); Trial Tr. (Vol. 1) at 65:2-69:1.)

248. Analysis of the groundwater at the Ash Pond Complex also requires an understanding of the direction of groundwater flow (the hydraulic gradient). (Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8689.)

249. In very general terms, groundwater is expected to flow toward the Cumberland River; however, it is an oversimplification to say that the direction of groundwater flow is generally toward the Cumberland River. For example, groundwater could flow west toward the Cumberland River, or it could flow in an indirect pathway northward and then westward and that direction may vary depending on location. (Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8689.) Ms. Perry's testimony was corroborated by the testimony of the TDEC witness, Mr. Dotson. (Trial Tr. (Vol. 3) at 25:15-26:3.)

250. The relationship of surface water and groundwater in karst environments is very complex because many different geologic factors can impact the flow and storage of water in a



karst setting. (Trial Tr. (Vol. 3) at 190:15-21; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8596.)

251. Ms. Perry testified that, at present, the precise movement pattern and associated time duration of the groundwater in the geologic formations beneath the Ash Pond Complex is being investigated further. (Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8689-90.)

252. Water level data can be used to evaluate relationships and factors that influence groundwater. (Trial Tr. (Vol. 4) at 44:1-10; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8690.)

253. The water level data at the Ash Pond Complex has been compiled on graphs (hydrographs) to provide a visual image of changes over time. (Trial Tr. (Vol. 4) at 44:11-45:20; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8690; JX 240 at TVGF\_107298 (PDF 19), TVGF\_107303, TVGF\_107304, TVGF\_107310.)

254. The Ash Pond Complex hydrographs show the water level in the Ash Pond Complex; the groundwater level, elevation, and temperature; the water level in the Cumberland River, and rainfall data. (Trial Tr. (Vol. 4) at 44:11-46:12; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8690; JX 240 at TVGF\_107298 (PDF 19), TVGF\_107303, TVGF\_107304, TVGF\_107310.)

255. According to the hydrograph data, some of the groundwater wells show fluctuations that are highly correlated with Cumberland River water levels, and in other wells, they are independent. Where water levels in wells and the water levels in the Cumberland River fluctuate in similar patterns, this may indicate a relatively high degree of communication between the groundwater and the Cumberland River, or it may indicate that the water levels in the groundwater wells and the river are responding similarly to an outside influence such as

rainfall. (Trial Tr. (Vol. 4) at 47:5-15.) TDEC's Mr. Dotson agreed with Ms. Perry's interpretation of the hydrograph data. (Trial Tr. (Vol. 3) at 29:11-30:1.)

256. In contrast, the hydrograph data clearly shows that changes in the groundwater levels are ***completely independent*** of water levels in the Ash Pond Complex, which evidences a lack of connection between the Ash Pond Complex and the underlying groundwater. (Trial Tr. (Vol. 4) at 45:21-50:10; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8691-92; JX 240 at TVGF\_107298, TVGF\_107310.)

257. Comparing the water levels in the Ash Pond Complex and the Cumberland River shows that they are not correlated and that ***there is no direct connection*** between the water in the Ash Pond Complex and the Cumberland River. (Trial Tr. (Vol. 4) at 48:15-50:10; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8691-92; JX 240 at TVGF\_107298, TVGF\_107310.)

258. Plaintiffs' witness, Dr. Groves, ignored this current hydrograph data (Trial Tr. (Vol. 1) at 74:14-75:9), despite his acknowledgement that similar data from the 1970s showed that pond level fluctuated with the level of the Cumberland River (Trial Tr. (Vol. 1) at 73:21-74:13) and that analysis of hydrographs (i.e., dataloggers) is "one of the most important technological advances" in studying karst hydrogeology (Trial Tr. (Vol. 1) at 83:15-84:1; *see also id.* at 85:2-6, 20-25).

259. Therefore, Ms. Perry concluded that, ***"based on available information, it is my opinion to a reasonable degree of scientific certainty that there are no open conduits providing a direct connection between the water in the Ash Pond Complex and the Cumberland River."*** (Trial Tr. (Vol. 4) at 50:6-10; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8692.)

260. On cross-examination, Ms. Perry was asked about the six (out of 75) groundwater monitoring wells for which MCL exceedances were reported, and on redirect examination,

Ms. Perry confirmed that “[t]he exceedances don’t tell us anything about conduit flow versus seepage flow.” (Trial Tr. (Vol. 4) at 87:24-88:13.)

261. According to Dr. Kutschke, the absence of a direct connection between the water in the Ash Pond Complex and the underlying groundwater also is evidenced by other data points, including the stable water elevation in Stilling Pond D demonstrating that the water in the pond is at its design elevation.<sup>34</sup> (Trial Tr. (Vol. 3) at 197:17-198:11; Trial Tr. (Vol. 4) at 48:15-18 (discussing JX 240 at TVGF\_107310); Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8597.)

262. The volume of water discharging at Outfall 001 also shows the absence of a direct connection between the water in the Ash Pond Complex and the underlying groundwater as well as an absence of water loss via karst features. (Trial Tr. (Vol. 3) at 198:13-19; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8597.)

263. Dr. Kutschke also testified that, “[i]f there were water loss via sinkholes or conduits beneath the Ash Pond Complex, there likely would be surface water manifestations of such features . . . . However, no such surface manifestations have been observed in the ash pond complex.” (Trial Tr. (Vol. 3) at 198:20-25; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8597.)

264. Dr. Kutschke further explained that, if there were an open conduit beneath the Ash Pond Complex, the ash would flow and you would certainly see a sinkhole appear because the ash in the ponds is saturated and is very fluid when wet. (Trial Tr. (Vol. 3) at 199:1-14.)

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<sup>34</sup> The aerial video footage of the Ash Pond Complex (TVA Ex. 61) provides a visual illustration of this fact, and as explained by Mr. Lang, the comparison footage at the end of the video between the discharge pipes and Outfall 001 shows “a constant flow coming in, a constant flow, essentially, that’s going out” (Trial Tr. (Vol. 3) at 102:10-16).

However, Dr. Kutschke stated that, “[w]e’ve had numerous people working out in this complex . . . and there have been no reported sinkholes within the complex.” (Trial Tr. (Vol. 3) at 199:21-24.)

265. Dr. Kutschke cited the Pond E dewatering efforts as “another data point evidencing the lack of direct connection between the Ash Pond Complex and the underlying groundwater, because pumping is required to remove the water.” (Trial Tr. (Vol. 3) at 200:7-10; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8597-98.)

266. According to Dr. Kutschke, the fact that the pond had to be pumped dry confirmed earlier information reported by Stantec in 2010 (*see* JX 67 at 8) and is significant because, if there were a conduit within the pooled area, the pooled area would drain. (Trial Tr. (Vol. 3) at 200:7-201:4; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8597-98.)

267. Dr. Kutschke testified that there no indications of leakage from either Pond A or Pond E and that ponds are holding water (Trial Tr. (Vol. 4) at 19:16-20, 30:2-11), and that he has not found sinkholes at the Gallatin plant (Trial Tr. (Vol. 3) at 193:21-194:2). Similarly, Mr. Lang testified that “*the entire pond is holding water.*” (Trial Tr. (Vol. 3) at 138:9.)

268. In sum, Dr. Kutschke determined that these additional data points combined with visual observations suggest minimal subsurface water loss in the wastewater flow, and to the extent that there is subsurface water loss, such flow is likely diffuse and occurs in an indirect, matrix flow, which evidences the absence of a direct karst connection between the Ash Pond Complex and the Cumberland River. (Trial Tr. (Vol. 3) at 201:5-15; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8598.) Thus, Dr. Kutschke concluded:

***[B]ased on available data, it is my professional opinion that the Ash Pond Complex is not losing water via karst features to the underlying groundwater, and there is no evidence currently available showing that there are any karst***

***features with a direct hydrologic connection between the Ash Pond Complex and the Cumberland River.***

(Trial Tr. (Vol. 3) at 201:16-21; Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8598.)

269. Accordingly, under the necessary site-specific inquiry, *see Ass’n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*17 n.16 (M.D. Tenn. Apr. 11, 2011), the Court concludes that Plaintiffs have not met their burden of proof to show that there is a direct link (through a conduit flow such as a sinkhole or fissure) between the water in the Ash Pond Complex and the underlying groundwater. *See id.* at \*18.

270. In other words, the Court concludes that the Plaintiffs have failed to meet their burden of proving that the Ash Pond Complex “physically introduces” or “causes” pollutants to enter the groundwater beneath the Ash Pond Complex. *See Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 584 (6th Cir. 1988); *Sierra Club v. BNSF Ry. Co.*, No. C13-967-JCC, 2016 WL 6217108, at \*8 (W.D. Wash. Oct. 25, 2016).

271. Instead, the Court concludes that the evidence on this issue preponderates in favor of TVA.<sup>35</sup> TVA’s witnesses have been onsite numerous times and have been studying the hydrologic connection issue at the Ash Pond Complex for nearly two years. TVA’s witnesses testified that there is no physical evidence of ongoing or intermittent non-seep flows (such as through fissures, sinkholes, or conduits) from the Ash Pond Complex to the underlying groundwater based on the hydrograph data, the volume of water discharging through Outfall 001,

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<sup>35</sup> *See Williams v. Eau Claire Pub. Sch.*, 397 F.3d 441, 444 (6th Cir. 2005) (“[A] preponderance of the evidence means such evidence as, when considered and compared with that opposed to it, has more convincing force and produces in your minds belief that what is sought to be proved is more likely true than not true.”).

the Pond E dewatering results, and the pond water level data. *See, e.g., Tamaska v. City of Bluff City, Tenn.*, 26 F. App'x 482, 485 (6th Cir. 2002) (requiring citizen plaintiffs to establish ongoing violations “by proving violations that continue on or after the date the complaint is filed or . . . by adducing evidence from which a reasonable trier of fact could find a continuing likelihood of a recurrence in intermittent or sporadic violations”) (internal quotation marks omitted).

272. Thus, the Court concludes that Plaintiffs have failed to establish the existence of conduit flows (such as through sinkholes and fissures) from the Ash Pond Complex to the underlying groundwater. This precludes a finding of liability because Plaintiffs’ evidence is insufficient to prove a conduit flow pathway from which Plaintiffs could “trace pollutants from their source to surface waters.” *Ass’n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*18 (M.D. Tenn. Apr. 11, 2011) (internal quotation marks omitted).

**D. Plaintiffs Failed to Prove the Existence of Non-Seep Flows from the Ash Pond Complex to the Cumberland River via Hydrologically Connected Groundwater That are Beyond TDEC’s Reasonable Contemplation.**

273. Even if Plaintiffs had met their burden of proof on the direct hydrologic connection issue (which the Court finds they did not), the Court has found that TDEC was aware of the possibility of flows from the Ash Pond Complex via groundwater that has a direct hydrologic connection to the Cumberland River (Email from Robert Alexander to Vojin Janjic, “Today’s Inquiry on TVA Gallatin NPDES & closed ash landfill” (Sept. 30, 2010), JX 137; EPA June 7, 2010 Memorandum Attach. B, *Water Quality-Based Effluent Limits Coal Combustion Waste Impoundments*, at 2, Doc. 65-1 at PageID 2122), and that this possibility was disclosed to TDEC during the public comment portion of the permitting process. (Letter from Environmental

Integrity Project to TDEC (June 13, 2011), JX 150 at 15-16; Trial Tr. (Vol. 2) at 59:4-8; 60:2-10.)

274. TDEC's Mr. Janjic confirmed that, at the time TDEC reissued the Permit in 2012, TDEC knew there were seeps from the ash ponds at Gallatin and "addressed them in the permit." (Trial Tr. (Vol. 2) at 55:10-13; *see also* Trial Tr. (Vol. 2) at 43:1-15, 55:10-56:14, 69:19-70:4.)

275. Mr. Janjic testified that "[t]here can be different kinds of seeps – and we're talking about with respect to this [Gallatin] facility only – that we are concerned with in terms of seeps that occur on the earthen berms of the ash pond. And those seeps can be varying in size and nature. There can be seeps that are larger, that are going to have more discernible amount of water coming through the seeps, and then seeps that are going to express themselves only as maybe a wet spot on the side of a berm." (Trial Tr. (Vol. 2) at 43:1-11.)

276. Mr. Janjic further testified at trial that "[e]very impoundment that is not [a] lined impoundment is going to have a certain amount of seepage, and that amount of seepage is defined in our engineering criteria document. So, we realize that any earthen impoundment are going to have a certain amount of seepage." (Trial Tr. (Vol. 2) at 48:16-24.)

277. In the "Review Comments and TDEC Responses" section of the Addendum to the Permit Rationale, TDEC responded to the comments that it received from environmental advocacy groups (including Plaintiff TCWN and Plaintiffs' counsel) and incorporated those responses into the permit. (Permit, Doc. 1-2 (JX 102) at PageID 96.)

278. Specifically, in response to the "EIP comment[]" that the high concentrations of metals in groundwater are migrating to the Cumberland River and should be addressed in the NPDES permit" (Permit, Doc. 1-2 (JX 102) at PageID 105), TDEC reasonably contemplated this

potential discharge when it issued the Permit in 2012 (Permit, Doc. 1-2 (JX 102) at PageID 106; Trial Tr. (Vol. 2) at 59:9-60:10.)

279. TDEC determined that this potential discharge could not be quantified and the possibility thereof could not be empirically measured; however, TDEC reasonably contemplated that the possibility of groundwater flow would “be a likely insignificant factor in affecting surface water as compared to the GAF ash pond discharge to the Lake of 27 MGD [Million Gallons per Day].” (Permit, Doc. 1-2 (JX 102) at PageID 106.)

280. To support its determination that the collective effect of groundwater flow and the 27 MGD wastewater discharge through Outfall 001 was not significant, TDEC examined data from TVA’s decades of monitoring of aquatic species in the Cumberland River upstream and downstream of Gallatin. (Permit, Doc. 1-2 (JX 102) at PageID 106.)

281. Therefore, although noting that it continued “to regulate groundwater conditions in the vicinity of the ash pond,” TDEC concluded that “no NPDES permit conditions are established” for “groundwater flow has not affected the maintenance of a balanced, indigenous [aquatic] population in the vicinity of the [Gallatin] plant.” (Permit, Doc. 1-2 (JX 102) at PageID 106; Trial Tr. (Vol. 2) at 59:9-60:10.)

282. Accordingly, the Court concludes that Plaintiffs have failed to prove the existence of hydrologic flows from the Ash Pond Complex via groundwater that exceed the volume of that which was adequately disclosed to and reasonably contemplated by TDEC during the permitting process. *See* Mem Op., Doc. 139 at PageID 5356) (holding that the reasonable contemplation test “may lead the Court to examine the pollutants at issue, but also the location of the discharge, its magnitude, or any other relevant trait”).



283. To the extent there is any ambiguity as to the volume of groundwater flow reasonably contemplated by TDEC, that ambiguity should be construed against Plaintiffs because TDEC drafted the Permit rationale, and Plaintiffs stand in the shoes of TDEC for purposes of this citizen enforcement action. *Altamaha Riverkeeper, Inc. v. Rayonier, Inc.*, No. CV 214-44, 2015 WL 1505971, at \*7 (S.D. Ga. Mar. 31, 2015) (“Here, the Riverkeeper stands in the shoes of Georgia EPD, who drafted the Permit. . . . Because Georgia EPD drafted the relevant provisions and issued the permit, any ambiguity as to whether the Georgia water quality standards are incorporated should be construed against the Riverkeeper.”) (internal citation and quotation marks omitted), *appeal dismissed* (May 14, 2015).

#### **IV. Findings of Fact and Conclusions of Law – Non-Registered Site Claims.**

284. The Court previously dismissed all of Plaintiffs’ Non-Registered Site claims “except insofar as they deal with . . . discharges from the Non-Registered Site into the Cumberland River.” Mem. Op., Doc. 139 at PageID 5368.

285. As to the Non-Registered Site, the Court found that “[o]pen factual issues exist with regard to the extent of the discharges that fall within [this] . . . circumscribed categor[y]” and that “TVA has demonstrated that some seeps were contemplated by TDEC at the time of the reissuance of the NPDES Permit in 2012.” Mem. Op., Doc. 139 at PageID 5367.

286. Thus, Plaintiffs have the burden of proving (1) the existence of the alleged flows from the Non-Registered Site (seeps and non-seep conduit flows via hydrologically connected groundwater) and that (2) the alleged flows are prohibited discharges under the CWA.

287. As a threshold matter, the Court concludes that Plaintiffs’ Non-Registered Site allegations fail to state a claim upon which relief can be granted because the Non-Registered Site is not a point source as a matter of law.

**A. The Non-Registered Site is Not a Point Source.**

**1. Nonpoint Source Pollution Under the CWA.**

288. The CWA “generally prohibits the discharge of any effluent into a navigable body of water unless the point source has obtained an NPDES permit.” *Int’l Paper Co. v. Ouellette*, 479 U.S. 481, 489 (1987).

289. The CWA divides “the sources of water pollution into categories: ‘point source,’ 33 U.S.C. § 1362(14); and ‘nonpoint source’ 33 U.S.C. § 1288.” *Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 582 (6th Cir. 1988).

290. The nonpoint source category is defined by exclusion and is comprised of those water pollution problems that do not involve a discharge from a point source. *Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 582 (6th Cir. 1988); *Nat’l Wildlife Fed’n v. Gorsuch*, 693 F.2d 156, 165-66 & n.28 (D.C. Cir. 1982); *see also Cordiano v. Metacon Gun Club, Inc.*, 575 F.3d 199, 219 (2d Cir. 2009) (“[T]he statute clearly indicates that there is a category of nonpoint source pollution, and leaves the regulation of nonpoint source pollution to the states.”).

291. 33 U.S.C. § 1314(f) empowers “the EPA the power to issue guidelines for identifying and evaluating the nature and extent of nonpoint sources of pollutants,” *Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 583 (6th Cir. 1988), and to issue “processes, procedures, and methods to control pollution resulting from . . . the disposal of pollutants in . . . subsurface excavations.” 33 U.S.C. § 1314(f)(D).

292. For purposes of implementing the CWA’s nonpoint source provisions, EPA has issued guidance defining nonpoint source pollution:

[Nonpoint source pollution] is caused by *diffuse sources* that are not regulated as point sources and normally is associated with agricultural,

silvicultural and urban runoff, runoff from construction activities, etc. ***Such pollution results in the human-made or human-induced alteration of the chemical, physical, biological, and radiological integrity of water.*** In practical terms, nonpoint source pollution does not result from a discharge at a specific, single location (such as a single pipe) but generally results from ***land runoff, precipitation***, atmospheric deposition, or ***percolation***.

EPA Office of Water, *Nonpoint Source Guidance* 3 (1987);<sup>36</sup> see also *Cordiano v. Metacon Gun Club, Inc.*, 575 F.3d 199, 221 (2d Cir. 2009) (“Nonpoint Source pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even our underground sources of drinking water.” (quoting EPA Office of Water, *Polluted* 5 (1994) (EPA Doc. No. 841-F-94-005))); Nonpoint Source Program and Grants Guidelines for States and Territories, 68 Fed.Reg. 60653, 60655 (2003) (“Nonpoint source pollution is caused by ***rainfall*** or snowmelt ***moving*** over and ***through the ground*** and carrying natural and human-made pollutants into lakes, rivers, streams, wetlands, estuaries, other coastal waters, and ground water.”).

293. The EPA’s Nonpoint Source Guidance clearly recognizes that the states are responsible for the regulation of nonpoint source pollution, which includes groundwater, surface runoff, and runoff/leachate from land disposal activities. EPA Office of Water, *Nonpoint Source Guidance* 6, 11-14, 32 & Appx. B (1987).

## **2. The Diffuse Sources of Water at the Non-Registered Site are Nonpoint Sources.**

294. In 1970, TVA ceased using the Non-Registered Site as a CCR surface impoundment; the Non-Registered Site was dewatered, and plant wastewater has not been

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<sup>36</sup> In accordance with Local Rule 7.01(e)(5), a copy of the EPA’s *Nonpoint Source Guidance* is being submitted herewith as Attachment 1.

sluiced to the Non-Registered Site for over 40 years. (Trial Tr. (Vol. 3) at 78:3-7; Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8558; JX 169 at 1; JX 171 at 2.)

295. Today, the Non-Registered Site is covered with soil and vegetation, including trees. (Unmanned Aerial System Video – Gallatin Fossil Plant (TVA Ex. 61); Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8692.)

296. The 1981 inspection of the Non-Registered Site reported that:

***These areas are abandoned. The only water into these areas is rainfall. There is no discharge from these areas. All rainfall is evaporated or percolates into the groundwater.***

(Interim Disposal Area Inspection (Mar. 25, 1981), JX 176 at 2.)

297. There are saturated conditions present within the coal ash in the Non-Registered Site due to the percolation of rainwater and surface water runoff/infiltration. (Trial Tr. (Vol. 4) at 51:16-52:11; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8693.)

298. To the extent there is groundwater percolating into the Non-Registered Site from upgradient, it is likely to be minor if it exists at all. (Trial Tr. (Vol. 4) at 52:16-22; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8693.)

299. Hydraulically, the water in the Non-Registered Site (received from the surface) exits by percolating slowly vertically downward into the underlying alluvium. (Trial Tr. (Vol. 4) at 54:1-5; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8693.)

300. Both TVA's and Plaintiffs' witnesses agree that the Non-Registered Site is located on top of alluvium deposited by the Cumberland River. (Trial Tr. (Vol. 1) at 55:7-57:21; 193:2-196:7; Trial Tr. (Vol. 3) at 196:7-197:13; Trial Tr. (Vol. 4) at 50:17-51:13; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8692; JX 59 at 4; JX 235.)

301. Plaintiffs' witness, Dr. Groves, defined "alluvial deposit" separately from "karst" and testified that they are "two different things." (Trial Tr. (Vol. 1) at 55:7-9.)

302. The alluvium beneath the Non-Registered Site consists primarily of clay. (Trial Tr. (Vol. 4) at 50:18-25; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8692; JX 59 at 4.)

303. The alluvium beneath the Non-Registered Site is a porous media so groundwater in the alluvium percolates slowly through the tiny pore spaces between grains of sand and clay. (Trial Tr. (Vol. 4) at 50:18-25; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8692; JX 232.)

304. There is no conduit flow through the alluvium beneath the Non-Registered Site. (Trial Tr. (Vol. 4) at 50:18-25; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8692; Trial Tr. (Vol. 1) at 195:7-196:7.)

305. Beneath the alluvium and at the eastern side of the Non-Registered Site is limestone bedrock. (Trial Tr. (Vol. 4) at 51:1-3; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8692-93.)

306. Groundwater flow through the alluvium and the bedrock beneath the Non-Registered Site is diffuse and moves westward toward the Cumberland River. (Trial Tr. (Vol. 4) at 50:23-25, 52:23-53:6; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8692-93.)

307. Due to the nature of the very low permeability of the alluvium, the rate of groundwater movement beneath the Non-Registered Site is slow. (Trial Tr. (Vol. 4) at 54:1-8; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8693.)

308. The total amount of groundwater reaching the Cumberland River from beneath the Non-Registered Site is very small and, compared to volume of flow in the Cumberland River (544.2 million gallons per day at low flow), the relative contribution of groundwater from beneath the Non-Registered Site to the Cumberland River can be roughly estimated at about

1,745 ft<sup>3</sup>/day, or 0.0002 MGD, which is miniscule. (Trial Tr. (Vol. 4) 54:8-16, 57:17-55:15; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8693-94.)

309. The occurrence of occasional seeps or areas of wet soil on the dikes of the Non-Registered Site indicate that some water is percolating laterally through the dikes. (Trial Tr. (Vol. 4) 54:8-16, 55:17-20; 56:21-25; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8693-94.)

310. The bottom of the ash within the subsurface of the Non-Registered Site is above the elevation of the Cumberland River, (Trial Tr. (Vol. 4) 55:17-56:19; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8694-95); therefore, while water from within the Non-Registered Site can occasionally percolate through the dikes and appear as embankment seepage, it cannot flow from the ash through dikes and directly to the Cumberland River (Trial Tr. (Vol. 4) 56:21-25; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8694-95).

311. Thus, the Court finds that, although there are saturated conditions within the subsurface coal ash at the Non-Registered Site, the evidence adduced at trial shows that primary source of this saturation is the vertical percolation of rainwater and the infiltration of surface/stormwater runoff; therefore, the Court concludes that the vertical and lateral percolation of water (as seepage) through and from the Non-Registered Site is nonpoint source pollution. *See Northwest Env'tl. Def. Ctr. v. Brown*, 640 F.3d 1063, 1070 (9th Cir. 2011) (“Stormwater that is not collected or channeled and then discharged, but rather runs off and dissipates in a natural and unimpeded manner, is not a discharge from a point source as defined by § 502(14) [33 U.S.C. § 1362(14)].”), *rev'd on other grounds and remanded sub nom. Decker v. Nw. Env'tl. Def. Ctr.*, 133 S. Ct. 1326 (2013); *Greater Yellowstone Coal. v. Lewis*, 628 F.3d 1143, 1152 (9th Cir. 2010), *as amended* (Jan. 25, 2011) (“The second potential source of discharge occurs when some water *seeps* through the cover and into the pits containing waste rock. ***This is nonpoint source***

*pollution because there is no confinement or containment of the water . . . .* The pits that collect waste rock do not constitute point sources within the meaning of the CWA . . . .”); *Cordiano v. Metacon Gun Club, Inc.*, 575 F.3d 199, 221 (2d Cir. 2009) (finding that “surface water runoff which is neither collected nor channeled constitutes nonpoint source pollution and consequentially is not subject to the CWA permit requirement”); *Tri-Realty Co. v. Ursinus Coll.*, No. CIV.A. 11-5885, 2013 WL 6164092, at \*7 (E.D. Pa. Nov. 21, 2013) (“**A discharge of pollutants into navigable waters occurring only through migration of groundwater and uncontrolled soil runoff represents ‘nonpoint source’ pollution.**”); *Friends of Santa Fe Cnty. v. LAC Minerals, Inc.*, 892 F. Supp. 1333, 1359 (D. N. M. 1995) (“**In other words, the seepages are non-point source carriers of pollutants similar to stormwater, and are therefore not subject to the Act’s permitting requirements.**”); Frank P. Grad, *Treatise on Environmental Law* Vol. 2 § 3.03, 3-215 (updated 2015) (“**Nonpoint sources include pollution from diffuse land use activities such as agriculture, construction and mining that enter the waters primarily through indiscrete and less identifiable natural processes such as runoffs, precipitation and percolation.**”)<sup>37</sup>

312. Also, even assuming there is downgradient migration of groundwater through and from the Non-Registered Site, “[g]roundwater is always presumed to be percolating unless sufficient proof is forthcoming that the water flows in a definite channel.” Frank P. Grad, *Treatise on Environmental Law* Vol. 2 § 3.05, 3-426 to 3-427 (updated 2015).

313. As such, the Court concludes that, to the extent there is downgradient migration of groundwater, it is percolating and, therefore, a diffuse nonpoint source. *Sierra Club v.*

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<sup>37</sup> In accordance with Local Rule 7.01(e)(5), cited excerpts from the *Treatise on Environmental Law* are being submitted herewith as Attachment 2. A copy of this treatise is available at the Vanderbilt University Law Library.

*El Paso Gold Mines*, 421 F.3d 1133, 1141 n.4 (10th Cir. 2005) (“Groundwater seepage that travels through fractured rock would be nonpoint source pollution, which is not subject to NPDES permitting.”); *Tri-Realty Co. v. Ursinus Coll.*, No. CIV.A. 11-5885, 2013 WL 6164092, at \*8 (E.D. Pa. Nov. 21, 2013) (“[T]he Court concludes that the diffuse downgradient migration of pollutants on top of or through soil and groundwater alleged here is nonpoint source pollution outside the purview of the CWA.”).

**3. The Non-Registered Site is Not a Point Source Because It is Not a “Conveyance” within the Meaning of the CWA.**

314. The CWA divides “the sources of water pollution into categories: ‘point source,’ 33 U.S.C. § 1362(14); and ‘nonpoint source’ 33 U.S.C. § 1288.” *Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 582 (6th Cir. 1988).

315. The nonpoint source category is defined by exclusion and is comprised of those water pollution problems that do not involve a discharge from a point source. *Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 582 (6th Cir. 1988); *Nat’l Wildlife Fed’n v. Gorsuch*, 693 F.2d 156, 165-66 & n.28 (D.C. Cir. 1982); *see also Cordiano v. Metacon Gun Club, Inc.*, 575 F.3d 199, 219 (2d Cir. 2009) (“[T]he statute clearly indicates that there is a category of nonpoint source pollution, and leaves the regulation of nonpoint source pollution to the states.”).

316. The CWA defines the term “point source” as “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.” 33 U.S.C. § 1362(14).

317. The touchstone for finding a “point source” is whether the alleged point source “convey[s] the pollutant to ‘navigable waters,’ which are, in turn, defined as waters of the



United States. . . . Tellingly, the examples of ‘point sources’ list by the [Clean Water] Act include . . . ***objects that do not themselves generate pollutants but merely transport them.***” *S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*, 541 U.S. 95, 105 (2004) (quoting 33 U.S.C. § 1362(7) and (14)); accord *Sierra Club v. BNSF Ry. Co.*, No. C13-967-JCC, 2016 WL 6217108, at \*8 (W.D. Wash. Oct. 25, 2016); see also *United States v. Plaza Health Labs., Inc.*, 3 F.3d 643, 646 (2d Cir. 1993) (“Although by its terms the definition of ‘point source’ is nonexclusive, the words used to define the term and the examples given (‘pipe, ditch, channel, tunnel, conduit, well, discrete fissure’, etc.) ***evoke images of physical structures and instrumentalities that systematically act as a means of conveying pollutants from an industrial source to navigable waterways.***”).

318. Eight years before the Congress established the NPDES permit program under the CWA, Webster’s Third New International Dictionary (“Webster’s Third”) (unabridged 1964) defined “conveyance” as “***the action of conveying***: . . . carrying, ***transporting***, transportation.”<sup>38</sup> See *L.A. Cnty. Flood Control Dist. v. Natural Res. Def. Council, Inc.*, 133 S. Ct. 710, 713 (2013) (citing the 2002 edition of Webster’s Third to discern the plain meaning of the CWA’s text); *Rapanos v. United States*, 547 U.S. 715, 801 (2006) (Stevens, J., dissenting) (citing the 1961 edition of Webster’s Third to discern the plain meaning of the CWA’s text).

319. Thus, to be a “conveyance” within the meaning of the CWA, the Court concludes that the alleged “point source” must perform the action of transporting pollutants.

320. The Court concludes that the Non-Registered Site is not, under any definition, a pond capable of actively conveying or transporting pollutants. On the contrary, the Court finds

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<sup>38</sup> In accordance with Local Rule 7.01(e)(5), a copy of the cited definition from the Webster’s Third International Dictionary is being submitted herewith as Attachment 3.

that the Non-Registered Site is a closed CCR surface impoundment with characteristics more akin to those of a closed, inactive CCR landfill. (Permit, Doc. 1-2 (JX 102) at PageID 106 (“Presently, [TDEC] regulates Gallatin Fossil Plant’s closed dry ash disposal area as a “Non-Registered-Site” (NRS 83-1324). Performance standards are *commensurate with regulation of the disposal area as a Class II Industrial Landfill.*”)); EPA’s Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities (“CCR Rule”), 80 Fed. Reg. 21302, 21342 (Apr. 17, 2015) (“*EPA considers these units [closed CCR surface impoundments] to be analogous to inactive CCR landfills.*”).

321. Based on the evidence at trial, the Court finds that the saturated conditions present within the coal ash at the Non-Registered Site are due to the percolation of rainwater and surface water runoff/infiltration which is diffuse and migrates slowly from the Non-Registered Site. There is no evidence that this diffuse migration of percolating rainwater/runoff has been channeled or collected. *See e.g., Greater Yellowstone Coal. v. Lewis*, 628 F.3d 1143, 1152 (9th Cir. 2010), *as amended* (Jan. 25, 2011) (“The text of § 401 and the case law are clear that *some type of collection or channeling is required to classify an activity as a point source.*”). Indeed, because the migration of percolating rainwater/runoff is diffuse, it is, by definition, the opposite of water that has been channeled or collected.

322. Therefore, the Court concludes that the Non-Registered Site does not fall within the CWA’s definition of “point source” because the Non-Registered Site, though it contains CCRs, does not itself actively “convey” or “transport” pollutants to waters of the United States. *See S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*, 541 U.S. 95, 105 (2004) (holding that a “point source” requires an active conveyance); *see also Greater Yellowstone Coal. v. Lewis*, 628 F.3d 1143, 1152 (9th Cir. 2010), *as amended* (Jan. 25, 2011) (“The pits that collect

waste rock do not constitute point sources within the meaning of the CWA . . . .”); *Murtaugh v. New York*, 810 F. Supp. 2d 446, 468 & n.5 (N.D.N.Y. 2011) (“The Second Circuit has *implicitly* indicated that a *landfill does not qualify as a point source*.”) (first italics in original); *Aiello v. Town of Brookhaven*, 136 F. Supp. 2d 81, 118 n.29 (E.D.N.Y. 2001) (“Consequently, the *landfill* and creek in the present case *do not appear to qualify as point sources*.”).

**B. There is No “Addition” of a Pollutant from the Non-Registered Site to the Cumberland River.**

323. Even if the Non-Registered Site were considered a point source under the CWA, the Court finds that Plaintiffs’ Non-Registered Site claims fail because Plaintiffs did not prove the “addition” of a pollutant from the Non-Registered Site to the Cumberland River.

324. The Court previously dismissed all of Plaintiffs’ Non-Registered Site claims “except insofar as they deal with . . . discharges from the Non-Registered Site into the Cumberland River. Mem. Op., Doc. 139 at PageID 5368.

325. As to the Non-Registered Site, the Court found that “the State Enforcement Action is targeted at groundwater contamination, not contamination of the Cumberland River through either seeps or any other leaks or hydrologic connections.” Mem. Op., Doc. 139 at PageID 5341-42.

326. The Court further determined that “[o]pen factual issues exist with regard to the extent of the discharges that fall within [this] . . . circumscribed categor[y]” and that “TVA has demonstrated that some seeps were contemplated by TDEC at the time of the reissuance of the NPDES Permit in 2012.” Mem. Op., Doc. 139 at PageID 5367.

327. At trial, however, Plaintiffs did not meet their burden of proving the existence of prohibited discharges from the Non-Registered Site in the form of seeps or conduit flows via groundwater with a direct hydrologic connection to the Cumberland River.

328. Plaintiffs did not prove the existence of an unrepaired seep at the Non-Registered Site that has an ongoing discernible flow which, according to Mr. Janjic, would not be authorized by the Permit. (Trial Tr. (Vol. 2) at 46:9-47:1.)

329. In fact, Plaintiffs' witnesses failed to identify *any* ongoing seeps at the Non-Registered Site—not even one. (See Trial Tr. (Vol. 3) at 56:13-18 (discussing Plaintiffs' failure of proof in the context of TVA's Rule 52(c) motion).)

330. Plaintiffs witness, Barry Sulkin, testified that he did not know whether there are, in fact, ongoing seep discharges from the Non-Registered Site:

It is also likely that pollutants from the NRS are being directly discharged into the Cumberland River, *although I have not been able to inspect the edge of the NRS to determine whether that is the case.*

(Sulkin DT, Doc. 227-3 (Pls. Ex. 19) at PageID 8449 ¶ 5.)

331. Also, as to Plaintiffs' sampling location NRS 6, Plaintiffs' witness, Mr. Sulkin, conceded that his reports do not provide a date as to when the CCR material was deposited in the sample area. (Trial Tr. (Vol. 2) at 115:17-25.)

332. Plaintiffs' witness, Mr. Quarles, testified that in 2014 and 2015 he took the samples along the shoreline of the Non-Registered Site designated as NRS 1, NRS 2, NRS 3, NRS 4, NRS 5, and NRS 6 on the Joint Map. (Quarles DT, Doc. 227-2 (Pls. Ex. 18) at PageID 8407-10, Joint Map, Doc. 220-1 (JX 279).)

333. However, Mr. Quarles provided no testimony or evidence about how long the CCR materials found in the samples he gathered had been in the Cumberland River or how the CCR materials came to be in the Cumberland River:

Q. Your report does not state how long the materials obtained from your samples had been in the river, though, does it?

A. It does not.

Q. Okay. And your report does not state how long the materials obtained from your Ash Pond Complex samples had been in the river, does it?

A. Does not.

Q. *And you further state in your report that, quote, your investigation did not determine how the waste reached the Cumberland River, correct?*

A. *Correct.*

Q. *For both your Ash Pond Complex and NRS samples, correct?*

A. *Correct.*

(Trial Tr. (Vol. 1) at 186:2-15.)

334. TVA's engineering consultant, AECOM, has identified a total of twenty-two seep locations at Gallatin, some of which are outside the ash disposal areas, and TVA's geotechnical engineering witness, Mr. Lang, testified that he has been personally involved in those seep identification efforts.<sup>39</sup> (Trial Tr. (Vol. 3) at 85:9-24; Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8561-62.)

335. According to Mr. Lang, nine of the twenty-two seep locations are on or adjacent to the embankments of the Non-Registered Site and six of those locations are no longer active seeps and the remaining seep locations are no longer flowing and/or have been repaired. (Trial Tr. (Vol. 3) at 92:6-93:11; Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8561-62.)

336. Mr. Lang also offered the following, un rebutted testimony:

At the nonregistered site, there is no record of coal ash flowing through an embankment seep and directly into the Cumberland River. In fact, *none of the*

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<sup>39</sup> Mr. Lang testified that it is common for earthen dam structures, such as the embankments of the ash disposal impoundments at Gallatin, to exhibit some levels of seepage and that seepage fluctuates seasonally depending on the frequency and intensity of rainfall events. (Trial Tr. (Vol. 3) at 82:9-25.)

*historic seep locations at the embankment dikes of the nonregistered site*, all of which are classified Level 1, *are currently flowing*.

Moreover, I was at the nonregistered site as recently as November of 2016, and I did not observe ongoing discharge from a seep of the embankment dikes of the nonregistered site to the Cumberland River.

(Trial Tr. (Vol. 3) at 93:13-21; Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8562.)

337. Additionally, TVA's hydrogeologist witness, Ms. Perry, testified that "while water from within the Non-Registered Site can occasionally percolate through the dikes and appear as seeps or wet spots on the dikes above the Cumberland River, it cannot flow from the ash through the dikes and directly to the Cumberland River." (Trial Tr. (Vol. 4) at 56:21-25; *see also* Trial Tr. (Vol. 4) at 55:17-56:25; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8694-95.)

338. Plaintiffs' witnesses also failed to identify any conduit flows via hydrologically connected groundwater such as through sinkholes or fissures.

339. Plaintiffs' witness, Dr. Groves, testified that he has thirty years of professional experience in the study of landscape aquifer systems with an emphasis in karst regions (Trial Tr. (Vol. 1) at 53:20-54:2), and according to Dr. Groves, karst areas often are characterized by the formation of sinkholes and conduits (Trial Tr. (Vol. 1) at 54:3-55:6).

340. However, Plaintiffs' karst expert offered no testimony related to the Non-Registered Site. Specifically, Dr. Groves conceded that his Rule 26(a)(2) reports do not document the existence of karst conditions at the Non-Registered Site nor do they discuss the movement of groundwater at the Non-Registered Site. (Trial Tr. (Vol. 1) at 57:23-58:6.)

341. Similarly, Plaintiffs' witness, Mr. Quarles, testified that he has not personally documented any sinkholes at the Non-Registered Site. (Trial Tr. (Vol. 1) at 195:4-6.) Additionally, Mr. Quarles relied upon the 2014 TVA-Arcadis "Groundwater Assessment Monitoring Project Summary and Risk Assessment Report" (JX 59) for information regarding

the history of the Non-Registered Site (Trial Tr. (Vol. 1) at 193:2-7), and the 2014 report states that “no sinkholes were observed in the pre-plant topography in the immediate vicinity of the NRS” (JX 59 at 4).

342. TVA’s witnesses agreed that the Non-Registered Site is not a karst site.

343. TVA’s karst engineering expert, Dr. Kutschke, testified that he has over twenty years of geotechnical engineering experience in karst areas (Kutschke DT, Doc. 229-2 (TVA Ex. 206) at PageID 8585-88; Trial Tr. (Vol. 3) at 177:2-21), and that the Non-Registered Site is not a karst site (Trial Tr. (Vol. 3) at 194:3-7, 196:7-25).

344. Also, TVA’s hydrogeologist witness, Ms. Perry, testified that there is no conduit flow through the alluvium beneath the Non-Registered Site. (Trial Tr. (Vol. 4) at 50:18-25; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8692.)

345. Accordingly, the Court finds that Plaintiffs did not meet their burden of proving the existence of prohibited discharges from the Non-Registered Site in the form of seeps or conduit flows via groundwater with a direct hydrologic connection and that Plaintiffs failed to meet their burden of tracing pollutants from the Non-Registered Site to the Cumberland River. *See Ass’n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, at \*18 (M.D. Tenn. Apr. 11, 2011).

346. The Court concludes that there is no “addition” of a pollutant to the Cumberland River from the Non-Registered Site because the source of water moving through and from the Non-Registered Site is attributable to the vertical percolation of rainwater and the infiltration of surface/stormwater runoff; therefore, the role of the Non-Registered Site is passive in that it does not itself “physically introduce” or “cause” the movement of pollutants to the waters of the United States. *Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 584 (6th Cir. 1988);

*Sierra Club v. BNSF Ry. Co.*, No. C13-967-JCC, 2016 WL 6217108, at \*8 (W.D. Wash. Oct. 25, 2016) (“Although the coal may be deposited by a statutorily defined point source on the ground near the tracks and move from the tracks into the water, it is not clear that the alleged point source, BNSF trains, *caused* the coal to move to the water.”) (italics in original).

**C. The CWA’s Permit Shield is Applicable to the Alleged Flows from the Non-Registered Site to the Cumberland River Because the Alleged Flows Are Not Beyond TDEC’s Reasonable Contemplation.**

347. As an initial matter, the Court concludes that the Non-Registered Site is subject to the CWA’s permit shield, 33 U.S.C. § 1342(k).

348. Under the CWA, NPDES permits are issued to “Facilities.” The EPA’s NPDES regulations require that “[a]ll applicants for NPDES permits . . . must provide the following information . . . [n]ame, mailing address, and location of the *facility* for which the application is submitted,” 40 C.F.R. § 122.21(f)(2), and EPA’s regulations define a Facility as “*any NPDES “point source” or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.*” 40 C.F.R. § 122.2; *see also* 40 C.F.R. § 123.2, 123.25(a)(4) (applying these regulations to state-administered NPDES programs).

349. The Permit renewal application specifically states that the application is for a Federal Facility: “US TVA Gallatin Fossil Plant.” (JX 135 at TVGF\_108966-67.)

350. The language of the Permit also shows that the Permit applies to both the Ash Pond Complex and the Non-Registered Site because the Permit discusses both sites and imposes requirements for both sites.

351. For example, in response to EIP Comment 12, TDEC made clear that the Permit’s dike inspection requirements (Permit, Doc. 1-2 (JX 102) at PageID 82-84) apply to the Non-Registered Site (Permit, Doc. 1-2 (JX 102) at PageID 105).



352. In response to EIP Comment 13, TDEC specifically discussed its regulation of groundwater at the Non-Registered Site, although TDEC clarified that “no NPDES permit conditions are established.” (Permit, Doc. 1-2 (JX 102) at PageID 106.)

353. Additionally, the Permit sets forth a requirement that TVA submit “an ash pond closure plan describing the steps to be taken to prevent contamination of surface waters *from the inactive site.*” (Permit, Doc. 1-2 (JX 102) at PageID 85.)

354. During the permit application process in January 2012, TVA also submitted to TDEC its “Gallatin Fossil Plant – Master Strategy” apprising TDEC of TVA’s plans for the entire Gallatin facility, including the “Closed Disposal Area” (i.e., the Non-Registered Site). (Permit, Doc. 1-2 (JX 102) at PageID 94-95 & n.7.)

355. Moreover, as the Court already has determined, “the Sixth Circuit concluded that discharges of pollutants that are not expressly included in a permit may still be subject to the shield if the pollutants had been within the reasonable contemplation of the permitting agency when the permit was issued.” Mem. Op., Doc. 139 at PageID 5355.

356. Specifically, the Court found that the permit shield exception applies in the Sixth Circuit if (1) the discharge at issue is disclosed to the permitting authority during the permitting process, and (2) the discharge at issue was within the permitting authority’s reasonable contemplation at the time the permit was issued. Mem. Op., Doc. 139 at PageID 5355; *see also* *Sierra Club v. ICG Hazard, LLC*, 781 F.3d 281, 290 (6th Cir. 2015));<sup>40</sup> *Piney Run Pres. Ass’n v.*

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<sup>40</sup> In *ICG Hazard*, the potential for the discharges at issue had been called to the attention of the state regulator (the Kentucky Division of Water (“KDOW”)) during the public review of the draft permit by an environmental advocacy organization which expressed concerns regarding selenium and cited to a United States Geologic Survey study identifying the presence of selenium in coal seams in Eastern Kentucky. *ICG Hazard, LLC*, 781 at 283, 290. KDOW responded to those concerns by adding a one-time sampling requirement to the permit. *Id.* at

*Cnty. Comm'rs of Carroll Cnty., MD*, 268 F.3d 255, 269 (4th Cir. 2001) (holding that, for purposes of the permit shield, NPDES permit “compliance is a broader concept than merely obeying the express restriction set forth on the face of the NPDES permit; all discharges adequately disclosed to the permitting authority are within the scope of the permit’s protection”).

357. As the Court already has recognized, under the CWA’s permit-shield provision at 33 U.S.C. § 1342(k), “the determinative issue is whether the party is in ‘[c]ompliance with’ the relevant NPDES permit, 33 U.S.C. § 1342(k), which the Sixth Circuit has read to mean that the discharges at issue were within the reasonable contemplation of the issuing agency.” Mem. Op., Doc. 139 at PageID 5356.

358. Here, there is no question that, “*during the permit application process*,” Mem. Op., Doc. 139 at PageID 5355 (internal quotation marks omitted) (emphasis in original), TDEC contemplated the possibility of flows from the Non-Registered Site via embankment seeps and via seepage to groundwater that has a direct hydrologic connection to the Cumberland River.

359. In 2010, before the draft permit was issued for comment, TDEC received an inquiry about the Gallatin Permit and seep discharges from the Non-Registered Site. The inquiry resulted in a September 30, 2010 email from Robert Alexander, an experienced TDEC permit writer and the senior reviewer for the Gallatin Permit (Trial Tr. (Vol. 4) at 95:23-96:17), to Mr. Janjic in which Mr. Alexander stated:

***This closed area [Non-Registered Site] likely has some seeps***, per the Stantec report, ***which the public/env groups may want us to address in future permits***.

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( . . . continued)

283. KDOW’s response to comments are part of the record in *Sierra Club v. ICG Hazard, LLC*, No. 6:11-cv-00148-GFVT-HAI, and are publicly available on the Eastern District of Kentucky’s CM/ECF website (Ex. E to Def.’s Mot. Summ. J., ECF No. 40-6 at PageID 322-23 (E.D. Ky. Feb. 17, 2012)).

My recommendation is that we say we're always interested in knowing about any discharges – maybe this person knows something we don't....

***And for those seeps from ash pond discharges, our approach is not to include them on the Permit:***

- 1) ***unless*** the seeps are confined in a pipe as a point-source discharge;
- 2) ***because*** the flow is so small that it can't be measured, in most cases; and
- 3) ***because*** the WQ [water quality] effects of the low-volume seeps are considered *de-minimus* since most ash ponds are on large bodies of water.

(Email from Robert Alexander to Vojin Janjic, "Today's Inquiry on TVA Gallatin NPDES & closed ash landfill" (Sept. 30, 2010), JX 137.)

360. The possibility of discharges from Non-Registered Site via alleged "unpermitted ***seeps and a hydrological connection between contaminated groundwater and the river***" (Letter from Environmental Integrity Project to TDEC (June 13, 2011), JX 150 at 15), also was disclosed affirmatively to TDEC during the public comment portion of the permitting process:

The Phase I report noted seepage around the ***closed ash disposal area***. These seeps may be discharging pollutants to the Cumberland River and should be addressed in the NPDES permit.".)

. . . .

The most recent groundwater report for Gallatin's ***closed ash disposal area*** includes current and historical monitoring results that show high concentrations of beryllium, cadmium, nickel, and vanadium in well 19. Well 19 is a shallow well immediately adjacent to the Cumberland River, and the groundwater potentiometric surface presented in the groundwater report suggests local groundwater is moving toward the river. This means that the high concentrations of beryllium, cadmium, nickel, and vanadium found in well 19 are being discharged to the Cumberland River.

(Letter from Environmental Integrity Project to TDEC (June 13, 2011), JX 150 at 15-16.)

361. TDEC explicitly acknowledged the environmental advocacy groups' comments regarding the alleged discharges from the Non-Registered Site via seeps and hydrologically connected groundwater in the Permit's Addendum to Rationale. (Permit, Doc. 1-2 (JX 102) at PageID 105-06 (EIP Cmts. 12-13); Trial Tr. (Vol. 2) at 58:16-60:10.)

362. Moreover, at trial, Mr. Janjic, the Manager of the Water-Based Systems Unit of TDEC's Division of Water Resources, confirmed that, when TDEC reissued the Permit in 2012, TDEC was aware that members of the public were raising issues about the alleged seepage discharges from the Non-Registered Site:

Q. Okay. So when TDEC issued this permit, *TDEC knew that some members of the public were raising issues about discharges - - alleged discharges of pollutants from the nonregistered site?*

A. Yes.

(Trial Tr. (Vol. 2) at 59:4-8.)

363. Thus, the Court finds that the possibility of discharges from the Non-Registered Site via seeps and hydrologically connected groundwater “were ‘within the reasonable contemplation of the permitting authority [TDEC] during the application process.’” Mem. Op., Doc. 139 at PageID 5355 (quoting *Sierra Club v. ICG Hazard, LLC*, 781, 286 (6th Cir. 2015)).

364. The Court further finds that Plaintiffs have failed to prove the existence of discharges from the Non-Registered Site via seeps and hydrologically connected groundwater that exceed the volume of that which were reasonably contemplated by TDEC during the permitting process.<sup>41</sup> (*See* Mem Op., Doc. 139 at PageID 5356) (holding that the reasonable

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<sup>41</sup> To the extent there is any ambiguity as to the volume of flows reasonably contemplated by TDEC, that ambiguity should be construed against Plaintiffs because TDEC drafted the Permit rationale, and Plaintiffs stand in the shoes of TDEC for purposes of this citizen enforcement action. *Altamaha Riverkeeper, Inc. v. Rayonier, Inc.*, No. CV 214-44, 2015 WL 1505971, at \*7 (S.D. Ga. Mar. 31, 2015) (“Here, the Riverkeeper stands in the shoes of Georgia EPD, who drafted the Permit. . . . Because Georgia EPD drafted the relevant provisions and issued the permit, any ambiguity as to whether the Georgia water quality standards are incorporated should be construed against the Riverkeeper.”) (internal citation and quotation marks omitted), appeal dismissed (May 14, 2015).

contemplation test “may lead the Court to examine the pollutants at issue, but also the location of the discharge, its magnitude, or any other relevant trait”).)

365. Therefore, the Court concludes that Plaintiffs’ Non-Registered Site claims are foreclosed by the CWA’s permit shield, 33 U.S.C. § 1342(k).

**V. Findings of Fact and Conclusions of Law — Plaintiffs Failed to Prove that TVA is in Violation of the Specific Permit Provisions Alleged in the Complaint**

366. Plaintiffs’ allegations that TVA is in violation of various NPDES Permit provisions are dependent upon Plaintiffs’ ability to prove the existence of the “alleged unauthorized discharges” from the Ash Pond Complex and the Non-Registered Site and that they were not within TDEC’s reasonable contemplation when it reissued the Gallatin Permit in 2012.<sup>42</sup> *See* Mem. Op., Doc. 139 at PageID 5343, 5367-68.

367. The Court’s construction of the terms of the Permit presents a question of law. Mem. Op., Doc. 139 at PageID 5360 (citing *Nw. Envtl. Advocates v. City of Portland*, 56 F.3d 979, 982 (9th Cir. 1995).)

368. “Generally speaking, the Court must interpret an NPDES Permit in the same manner as it would a contract, determining first whether a particular terms has an unambiguous meaning, and, if the meaning is ambiguous, looking to the document as a whole, its underlying purpose, and, if necessary, appropriate extrinsic evidence to aid the Court’s construction.” Mem. Op., Doc. 139 at PageID 5360 (citing *Piney Run Pres. Ass’n v. Cnty. Comm’rs of Carroll Cnty., Md.*, 268 F.3d 255, 269-70 (4th Cir. 2001).)

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<sup>42</sup> If it were otherwise, the Permit would have been rendered a nullity when issued. *See Natural Res. Def. Council v. Metro. Water Reclamation Dist. of Greater Chicago*, 175 F. Supp. 3d 1041, 1062 n.15 (N.D. Ill. 2016) (“Imposing a zero-tolerance standard for phosphorus would also render the District’s NPDES permits a nullity when issued; as already noted, the permitting authority clearly contemplated the input of some amount of phosphorus since it issued the permit after disclosure of the phosphorus component.”).

369. For purposes of Permit interpretation, the Plaintiffs legally stand in the shoes of the Permit drafter, TDEC. *See, e.g., Altamaha Riverkeeper, Inc. v. Rayonier, Inc.*, No. CV 214-44, 2015 WL 1505971, at \*7 (S.D. Ga. Mar. 31, 2015); *DP Marina, LLC v. City of Chattanooga*, 41 F. Supp. 3d 682, 689 (E.D. Tenn. 2014).

370. Accordingly, the fundamental common law rules of interpretation applicable here include the following:

(1) ***Words and other conduct are interpreted in the light of all the circumstances***, and if the principal purpose of the parties is ascertainable it is given great weight.

(2) A writing is interpreted as a whole, and ***all writings that are part of the same transaction are interpreted together***.

....

(4) Where an agreement involves repeated occasions for performance by either party with knowledge of the nature of the performance and opportunity for objection to it by the other, any ***course of performance*** accepted or acquiesced in without objection ***is given great weight*** in the interpretation of the agreement.

(5) ***Wherever reasonable, the manifestations of intention*** of the parties to a promise or agreement ***are interpreted as consistent with each other and with*** any relevant course of performance, ***course of dealing***, or usage of trade.

Restatement (Second) of Contracts § 202 (1981) (Rules in Aid of Interpretation) (emphasis added). “There is no requirement that an agreement be ambiguous before evidence of course of dealing can be shown[.]” *Id.* § 223 cmt. b.

371. Numerous Supreme Court decisions are in accord, and since the Permit “is to be construed for enforcement purposes basically as a contract, reliance upon certain aids to construction is proper, as with any other contract.” *United States v. ITT Cont’l Baking Co.*, 420 U.S. 223, 238 (1975) (stating principles applicable to interpretation of a consent decree). “Such aids include the circumstances surrounding the formation of the [Permit].” *Id.* And

“[s]uch reliance does not in any way depart from the ‘four corners’ rule[.]” *Id.* And where through a course of dealing an “interpretation has been adhered to over many years by all the parties, including those government officials who drew up and administered the decree from the start,” the interpretation cannot be nullified and replaced “simply because another reading might seem more consistent” with the underlying statutory purpose. *United States v. Atl. Ref. Co.*, 360 U.S. 19, 23-24 (1959).

372. When analyzed under the above principles, it is apparent that, as a matter of law, Plaintiffs’ allegations of Permit violations based on discharges via seepage through the embankments and hydrologically connected groundwater are wholly without merit.<sup>43</sup>

373. Specifically, Mr. Janjic, the Manager of the Water-Based Systems Unit of TDEC’s Division of Water Resources, testified on cross-examination about the Permit’s Sanitary Sewer and Removed Substances provision. (Trial Tr. (Vol. 2) at 62:3-63:22.)

374. Mr. Janjic testified that TDEC was aware of the possibility of seeps and that, in the Addendum to Permit Rationale, TDEC wrote almost two pages of explanation regarding seeps and how TDEC expected seeps to be de minimis and the impacts inconsequential. (Trial Tr. (Vol. 2) at 62:6-25.)

375. If seepage discharges were a violation of the Permit’s Sanitary Sewer or Removed Substances provision, there would have been no need for TDEC to write two pages of explanation about how TDEC has addressed seeps through the Permit’s dike inspection provisions (JX 102 at PageID 105), how “TDEC experience with these seeps is that additional pollutant loading, if possible, would be de minimus [sic]” (JX 102 at PageID 105), or why TDEC

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<sup>43</sup> A complete discussion of these fundamental principles of interpretation and their application to Plaintiffs’ allegations of Permit violations are set forth in TVA’s accompanying post-trial brief.

determined that “no NPDES permit conditions are established” for possible discharges via groundwater with a hydrologic connection to the Cumberland River (JX 102 at PageID 106).

376. At best, Mr. Janjic’s response to the logic of this inquiry underscores the ambiguity of whether the Permit’s Sanitary Sewer and Removed Substances provisions apply to alleged seepage discharges (Trial Tr. (Vol. 2) at 62:21-63:22), and as a matter of law, any ambiguities are to be construed against the Plaintiffs. *See Altamaha Riverkeeper, Inc. v. Rayonier, Inc.*, No. CV214-44, 2015 WL 1505971, at \*7 (S.D. Ga. Mar. 31, 2015) (“Because Georgia EPD drafted the relevant provisions and issued the [NPDES] permit, any ambiguity as to whether the Georgia water quality standards are incorporated should be construed against the [Georgia EPD].”).

377. If TDEC in 2012 had considered seepage through the embankments and hydrologically connected groundwater to be prohibited because such seepage is not authorized by the Permit, there would have been no need for TDEC’s extensive discussion in the Permit’s Addendum to Rationale. (JX 102 at PageID 105-06.) Instead, the Permit’s Addendum to Rationale simply would have stated that all seepage of coal ash leachate from the unlined Gallatin facilities to surface or subsurface waters would henceforth be prohibited as not authorized by the reissued Permit—thereby prospectively informing the public and TVA of TDEC’s interpretation of the reissued Permit.

378. Also, there is no evidence that TDEC notified TVA in 2012 that it was construing the reissued Permit such that the ongoing seepage from the unlined Gallatin facilities to surface or subsurface waters would constitute an immediate breach of the Permit. If TDEC had so construed the reissued Permit in 2012, basic considerations of due process, fair dealing, and fair notice would have required such notification.



379. In *Wisconsin Resources Protection Council v. Flambeau Mining Co.*, 727 F.3d 700, 707 (7th Cir. 2013), a CWA enforcement action, the Seventh Circuit stated: “Informed by basic principles of due process, it is ‘a cardinal rule of administrative law’ that a regulated party must be given ‘fair warning’ of what conduct is prohibited or required of it.” The court then reversed a bench trial finding that the defendant mining company had violated the CWA by discharging copper into navigable waters without a proper permit. *Id.* at 711. Under principles of due process and fair notice, the court held that the mining company could not be liable where the state permitting authority had issued a mining permit and informed the mining company—incorrectly—that the mining permit constituted a valid NPDES permit. *Id.*

380. Moreover, under Tennessee’s statutory “Bill of Rights for Permit Applicants,” TVA had a statutory right to expect TDEC to be forthright in 2012 and inform TVA if TDEC, contrary to the long course of dealing between TDEC and TVA, had changed its position and considered the long-known ongoing seepage to no longer be permissible or authorized by the reissued Permit. *See* Tenn. Code Ann. 69-3-141 (providing that the permitting process “should afford applicants basic due process,” and that applicants “have the right to assistance from the department [TDEC] in understanding regulatory and permit requirements”).

381. The above legal principles are clearly applicable here given the long course of dealing between TDEC and TVA treating the long-known ongoing seepage from the unlined Gallatin facilities as permissible and authorized.

382. Accordingly, the Court concludes that; under fundamental principles of permit interpretation, and due process, fair dealing and fair notice; Plaintiffs’ allegations of violations of specific Permit provisions are invalid as a matter of law.

**A. TDEC Has Found That TVA is in Compliance with the Permit Provisions.**

383. Additionally, the Court finds that Plaintiffs failed to prove their allegations of Permit violations.

384. Since the effective date of the Permit on July 1, 2012, TDEC has conducted two Compliance Evaluation Inspections — one on August 21, 2014, and the second on April 25, 2016. (JX 247; JX 248; JX 249; JX 250.)

385. In 2014, TDEC determined that “[n]o compliance issues [were] noted” and that TVA was in compliance with the Permit. (TDEC Dataviewer Entry for Aug. 21, 2014 Gallatin NPDES Permit Compliance Evaluation Inspection, JX 248; *see also* Email from Michael Gray - GAF Regulatory Inspection Notice (Aug. 21, 2014, JX 247 at 1 (“No violations were identified.”).)

386. In 2016, TDEC conducted an evaluation of the following areas: Permit, Records, Facility Site Review, Effluent/Receiving Waters, Flow Measurement, Operations & Maintenance, and Storm Water. (TDEC ICIS NPDES Facilities Inspection Report for Gallatin (Apr. 25, 2016), JX 249.)

387. Specifically, TDEC made the following findings during its 2016 compliance inspection:

- “Prior records review of the U.S. EPA Integrated Compliance Information System (ICIS) indicated there had been no effluent or reporting violations since the previous inspection.”
- “Review of the Dike Inspection Reports showed inspections are occurring in accordance with Part III.B of the NPDES permit.”
- “The site is driven daily and walked quarterly by site personnel.”
- “[T]he personnel carrying out these inspections have been trained properly[.]”
- “Annual inspections by a professional engineer have been occurring as required.”

- TVA has “demonstrate[ed] compliance with Part III of the permit requiring 24-hour notice to begin remediation of any changes in dike or berm structures.”
- “All other documentation required by Part III.B-Part III.F was available for review on site as well as on file with the Division.”
- TDEC “commends TVA Gallatin for generally exceptional records maintenance and organization.”
- “No obvious solids or oils were noted that could not be reasonably expected to exist in untreated river water.”
- “No obvious problems with the berms or dike structures were observed during the inspection.”
- “Several past seep repairs were observed, and no noticeable seeps were occurring at these sites.”
- “The GAF goes beyond what is required by the permit and . . . [TDEC] in order to ensure the required actions are properly carried out and documented,” and “[t]hese measures include checklists, detailed calibration logs, and multiple steps of data review.”

(Compliance Evaluation Inspection Letter from TDEC to TVA (May 23, 2016), JX 250 at 1-3.)

388. Robert Alexander, an experienced TDEC permit writer and the senior reviewer for the Gallatin Permit (Trial Tr. (Vol. 4) at 95:23-96:17), was present for TDEC’s 2016 compliance evaluation inspection (Trial Tr. (Vol. 4) at 96:18-98:13), and Mr. Alexander confirmed at trial that 2016 compliance evaluation inspection resulted in a finding of “no violation” (Trial Tr. (Vol. 4) at 98:14-20).

389. Upon completion of the 2016 compliance evaluation inspection, TDEC concluded that “[n]o permit violations were observed, and as such there are at this time no corrective actions that need to be taken.” (JX 250 at 3.)

390. Mr. Alexander testified that he “agree[d] with that conclusion.” (Trial Tr. (Vol. 4) at 101:12-19.)

391. Accordingly, the Court concludes that Plaintiffs have failed to prove Claims E.b, E.c, and E.d because Plaintiffs stand in the shoes of TDEC and are bound by TDEC's conclusion that there were no Permit violations in 2014 or 2016 and that TVA was in compliance with the Permit's "Sludge/Solid Waste Removal" provision, Part I.A Subsection (c); the Permit's "Proper Operation and Maintenance" provision, Part II.A Subsection 4a.; and the Permit's "24-hour Notice" provision, Part II.C Subsection 2.

**1. TVA is in compliance with the Permit's "Sludge/Solid Waste Removal" provision.**

392. In 2016, TDEC found that TVA was in compliance with the Permit's Sludge/Solid Waste Removal provision, Part I.A Subsection (c) (Permit, Doc. 1-2 (JX 102) at PageID 68). (TDEC Compliance Evaluation Inspection Letter from TDEC to TVA (May 23, 2016), JX 250 at 2 ("No obvious solids or oils were noted that could not be reasonably expected to exist in untreated river water.").)

393. Accordingly, the Court concludes that Plaintiffs have not proved noncompliance with the Permit's "Sludge/Solid Waste Removal" provision; therefore, Plaintiffs' Claim E.b fails.

**2. TVA is in compliance with the Permit's "Proper Operation and Maintenance" provision.**

394. In 2016, TDEC found that TVA was in compliance with the actions required under the Permit's "Proper Operation and Maintenance" provision, Part II.A Subsection 4a. (Permit, Doc. 1-2 (JX 102) at PageID 76):

- "No obvious problems with the berms or dike structures were observed during the inspection."
- "Several past seep repairs were observed, and no noticeable seeps were occurring at these sites."
- "The GAF goes beyond what is required by the permit and . . . [TDEC] in order to ensure the required actions are properly carried

out and documented,” and “[t]hese measures include checklists, detailed calibration logs, and multiple steps of data review.”

(Compliance Evaluation Inspection Letter from TDEC to TVA (May 23, 2016), JX 250 at 2-3; *see also* TDEC ICIS NPDES Facilities Inspection Report for Gallatin (Apr. 25, 2016), JX 249 (showing that the “Operations & Maintenance” were among the areas evaluated during TDEC’s 2016 compliance evaluation inspection).)

395. Further, Mr. Alexander was present during the 2016 inspection, and he testified that he agreed with the findings set forth in the letter (JX 250) regarding proper operation and maintenance. (Trial Tr. (Vol. 4) at 99:9-100:5.)

396. Also, contrary to Plaintiffs’ allegations (Compl., Doc. 1 at PageID 49-50), neither the EPA’s 2013 Dam Assessment Report for Gallatin (JX 126) nor the TVA Office of the Inspector General (“OIG”) report, entitled TVA’s Groundwater Monitoring At Coal Combustion Products Disposal Areas (June 21, 2011) (JX 125), establish a violation of the Permit’s “Proper Operation and Maintenance” provision.

397. As an initial matter, the Court finds that Plaintiffs put on no proof at trial regarding the EPA’s 2013 Dam Assessment Report (JX 126) or the TVA OIG Report (JX 125).

398. The stated purpose of the 2013 EPA Dam Assessment Report was “to assess the structural stability of the impoundments or other similar management units that contain ‘wet’ handled CCRs.” (EPA Request for Action Plan (June 13, 2013) (JX 185); *see also* EPA Dam Assessment Report at 3 (2013) (stating that the purpose of the report is “to evaluate the condition and potential of residue release from the three management units [at Gallatin] and to determine the hazard potential classification” in the event of such a release) (JX 126 at iii).)

399. The Dam Assessment Report made the following conclusions related to the Ash Pond Complex’s “Suitability for Continued Safe and Reliable Operation.”

- The Gallatin Fly Ash Pone E is rated SATISFACTORY for continued safe and reliable operation, as no deficiencies were noted.
- The Bottom Ash Pond A is rated FAIR. ***This rating is considered temporary and will be reassessed as satisfactory*** after successful implementation of recommended remedial measures to improve the factor of safety against potential non-global (maintenance-type) slope failures of the divider dike and with successful implementation of the new spillway at the Bottom Ash Pond.
- The Stilling Ponds B, C, and D system is rated FAIR. The satisfactory structural stability of the dikes that contain the stilling ponds, as indicated by the supplemental engineering documentation, and the fact that TVA is actively addressing the hydrologic/hydraulic deficiency by engaging URS to study ways to upgrade the system to handle the design flood flow, weighted positively to a fair rating for the stilling pond complex. ***This rating will be revised as satisfactory after successful implementation of measures to improve the stilling pond complex to safely pass the design flood flow.***
- ***No other existing or potential management unit safety deficiencies were recognized*** in the field assessment and review of furnished operations, maintenance, surveillance, and monitoring information.

(EPA Dam Assessment Report at 11 (2013), JX 126 at 1-3 (PDF pg. 41); Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8562-64.)

400. The Dam Assessment Report noted that “seepage areas are minor and are adequately monitored.” (EPA Dam Assessment Report at 7-11, JX 126 at 7-11 (PDF pg. 82); Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8563.)

401. In June 2013, EPA issued a “Request for Action Plan” to TVA requesting that TVA inform EPA as to how TVA would “address each of the recommendations found in the final report.” (EPA Request for Action Plan (June 13, 2013), JX 185; Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8563-64.)

402. In August 2013, TVA informed EPA of its revised action plan for several facilities including Gallatin. (Resp. to EPA Request for Action Plan (Aug. 16, 2013), JX 186; Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8564.)

403. In April 2015, TVA notified EPA “of completion of the requirements for the Action Plan for GAF” and informed EPA that all of the requirements had been completed as of 2014. (Resp. to EPA Request for Action Plan (Apr. 29, 2015), JX 187; Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8564.)

404. According to the testimony of TVA’s geotechnical engineering witness, Gabriel Lang, TVA has addressed all issues identified in EPA’s 2013 assessment of the Ash Pond Complex; therefore, the entire Ash Pond Complex has a satisfactory operation and maintenance rating under the EPA’s proper operation and maintenance criteria. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8564.)

405. The 2011 OIG Report pertains solely to groundwater monitoring at the Non-Registered Site and notes specifically that such monitoring was being conducted under TVA’s 1995 Closure/Post Closure Plan for the Non-Registered Site, which was approved by TDEC’s Division of Solid Waste Management in 1997. (OIG Report (June 21, 2011), JX 125.)

406. The OIG Report was published more than one year before TDEC reissued the Gallatin Permit in 2012, and the OIG expressly acknowledged that its findings had nothing to do with the Gallatin NPDES Permit:

The scope of our review included groundwater monitoring for calendar years 2008 and 2009 at TVA fossil plant CCP disposal areas. ***It did not include monitoring of surface discharges at ponds under National Pollutant Discharge Elimination System regulations.***

(OIG Report (June 21, 2011), JX 125 at 3.)

407. For all of these reasons, the Court concludes that Plaintiffs have not proved noncompliance with the Permit's "Proper Operation and Maintenance" provision, Part II.A Subsection 4a.; therefore, Plaintiffs' Claim E.c fails.

**3. TVA is in compliance with the Permit's "24-Hour Notice" provision.**

408. As an initial matter, the Court finds that Plaintiffs put on no proof at trial regarding the Permit's "24-Hour Notice" provision.

409. The Court also finds that Plaintiffs failed to prove the elements of this violation because Plaintiffs did not adduce any proof at trial of "any noncompliance which could cause a threat to public drinking supplies or any other discharge which could constitute a threat to human health or the environment." (JX 102 at PageID 79.) In fact, Plaintiffs offered no evidence whatsoever related to "public drinking supplies."

410. The "24-Hour Notice" provision also requires that, in the event of a discharge to which the provision is applicable, "the permittee shall provide the Director [of TDEC] with the following information:

- i. A *description of the discharge* and cause of noncompliance;
- ii. The *period of noncompliance, including exact dates and times* or, if not corrected, the anticipated time the noncompliance is expected to continue . . . .

(JX 102 at PageID 79.)

411. At a minimum, Plaintiffs' proof at trial should have included this same information to state a claim for a violation of this Permit provision; it did not.

412. Additionally, during the 2016 compliance evaluation inspection, TDEC found that "[p]rior records review of the U.S. EPA Integrated Compliance Information System (ICIS) indicated there had been no effluent or reporting violations since the previous inspection."



(TDEC Compliance Evaluation Inspection Letter from TDEC to TVA (May 23, 2016), JX 250 at 1.)

413. This finding is consistent with the statement in the Permit's Rationale that, "[d]uring the previous permit term, TVA Gallatin Fossil Plant did not have any appreciable difficulty in meeting effluent limitations as outlined in the previous permit." (JX 102 at PageID 113.)

414. For all of these reasons, the Court concludes that Plaintiffs have not proved noncompliance with the Permit's "24-Hour Notice" provision; therefore, Plaintiffs' Claim E.d fails.

**B. The Permit's Sanitary Sewer Overflow Provision Applies Only to Sewage Waste.**

415. Part II.C Subsection 3 of the Permit prohibits Sanitary Sewer Overflows, and the permit defines a "Sanitary Sewer Overflow" as "the discharge to land or water of wastes from any portion of the collection, transmission, or treatment system other than through permitted outfalls." (Permit, Doc. 1-2 (JX 102) at PageID 79.)

416. Plaintiffs' Claim E.e alleges that "TVA's discharge of polluted wastewater either through seeps in the earthen dams or through groundwater are illegal overflows" in violation of the Permit's "Sanitary Sewer Overflow" provision. (Doc. 1 at PageID 51.)

417. A Sanitary Sewer System is "[a] municipal wastewater collection system that conveys domestic, commercial, and industrial wastewater, and limited amounts of infiltrated groundwater and storm water to a [Publicly Owned Treatment Works]." EPA Office of Water, EPA 833-R-04-001, *Report to Congress, Impacts and Control of CSOs and SSOs*, GL-4, ES-2, 1-2 (August 2004); accord Tenn. Comp. R. & Regs. 0400-46-02-.02(43) (defining a "Sanitary Sewer" as "[a] conduit intended to carry liquid and water-carried wastes from residences,

commercial buildings, industrial plants and institutions together with minor quantities of ground, storm and surface waters that are not admitted intentionally”).

418. The EPA defines a Sanitary Sewer Overflow as “[a]n untreated or partially treated sewage release from a sanitary sewer system.” EPA Office of Water, EPA 833-R-04-001, *Report to Congress, Impacts and Control of CSOs and SSOs* (August 2004), JX 252 at GL-4, ES-2, 1-2 to 1-3; *see also* S. REP. 95-370, 81, 1977 U.S.C.C.A.N. 4326, 4406 (July 28, 1977) (“Where municipal sanitary and storm sewer systems are combined, as is the case in many municipalities, significant bypasses of raw sewage occur during periods of rainfall or snowmelt.”).

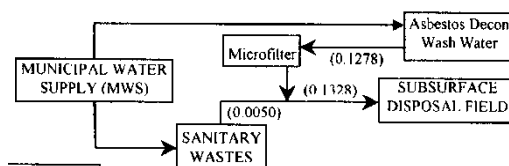
419. According to the EPA Permit Writer’s Manual, “occasional, unintentional spills of **raw sewage** from municipal sanitary sewers occur in almost every system. Such types of releases are called sanitary sewer overflows (SSOs).” (EPA Office of Wastewater Management, Water Permits Division, EPA-833-K-10-001, *NPDES Permit Writers’ Manual* (September 2010), JX 251 § 2.3.1.5.)

420. Mr. Janjic, the Manager of the Water-Based Systems Unit of TDEC’s Division of Water Resources, testified that TDEC uses the EPA Permit Writer’s Manual in writing TDEC-issued NPDES permits. (Trial Tr. (Vol. 2) at 64:7-65:3.) TDEC also cited to the manual as authority in the Permit’s Addendum to Rationale. (JX 102 at PageID 94; 101 & n.8.)

421. Although defined differently, Mr. Janjic testified that the intent of the Permit’s definition of Sanitary Sewer Overflow is the same as that set forth in the EPA Permit Writer’s Manual. (Trial Tr. (Vol. 2) at 65:4-22.)

422. Thus, the Court concludes that, as the name implies, a Sanitary Sewer Overflow is the discharge of sanitary waste or raw sewage, and the Court finds that, at Gallatin, there is no discharge of “sanitary waste” or sewage to the Ash Pond Complex or to the NRS.

423. Rather, as shown on the “Flow Schematic Diagram” for the Gallatin NPDES Permit, sanitary waste at the Gallatin facility is discharged using the “Municipal Water Supply” to a “Subsurface Disposal Field.”



(Doc. 1-1 at PageID 56.)

424. Thus, Plaintiffs’ Claim E.e fails to state a claim upon which relief may be granted.

## VI. Proposed Findings of Fact and Conclusions of Law — Remedies.

425. The purpose of the CWA “is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. § 1251(a),

426. Pertinent here, the CWA prohibits the addition of pollutants to navigable waters from a point source unless the discharge is authorized by an NPDES permit issued pursuant to 33 U.S.C. § 1342. 33 U.S.C. § 1311(a), 1362(7), 1362(12); *see also* Mem. Op., Doc. 139 at PageID 5366 (“A party seeking to establish a Clean Water Act violation generally must establish “five elements . . . : (1) a *pollutant* must be (2) *added* (3) *to navigable waters* (4) *from* (5) a *point source*.” (quoting *Nat’l Wildlife Fed’n v. Consumers Power Co.*, 862 F.2d 580, 583 (6th Cir. 1988))).

427. Groundwater is not included within the CWA’s definition of navigable waters. 40 C.F.R. § 122.2 (defining the term “waters of the United States” for purposes of the CWA); *see*

also 40 C.F.R. § 123.2 (applying the definitions set forth in 40 C.F.R. § 122.2 to state-administered NPDES programs). In fact, the CWA’s implementing regulations state specifically that “[g]roundwater, including groundwater drained through subsurface drainage systems,” is not included within the regulatory definition of “‘waters of the United States.’”<sup>44</sup> 40 C.F.R. § 122.2.

428. Assuming arguendo that Plaintiffs proved an unlawful discharge under 33 U.S.C. § 1311(a), the Court finds that the bulk of Plaintiffs’ trial proof concerned the theoretical risk to surface water (i.e., the Cumberland River) by CCR-impacted groundwater.

429. In contrast, Plaintiffs’ limited proof regarding actual impact/harm to the water quality of the Cumberland River—the key issue for CWA remedy purposes—was unconvincing.

430. The judgmental sampling methodology utilized by Plaintiffs’ primary witness on the issue of water quality, Mr. Sulkin, has been criticized as unreliable. (Trial Tr. (Vol. 2) at 116:1-120:7.) On cross-examination, Mr. Sulkin conceded that, according to EPA, “***conclusions drawn from judgmental samples . . . apply only to those individual samples; aggregation may result in severe bias due to lack of representativeness and lead to highly erroneous conclusions.***” (Trial Tr. (Vol. 2) at 119:22-120:7.)

431. Mr. Sulkin also conceded that the purpose of his sampling was not identify or determine the ambient water quality of the Cumberland River. (Trial Tr. (Vol. 2) at 120:8-12.)

432. Mr. Sulkin testified regarding his sampling that, “[w]hile many designated uses apply to the Cumberland River, the criteria for the domestic water supply use are generally the most protective and thus controlling.” (Trial Tr. (Vol. 2) at 94:9-11.)

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<sup>44</sup> Although the Sixth Circuit Court of Appeals recently has stayed implementation of the June 29, 2015 Clean Water Rule clarifying “the definition of ‘waters of the United States,’ as used in the Clean Water Act[.]” *In re E.P.A.*, 803 F.3d 804, 805 (6th Cir. 2015), this stay is not pertinent here because the stay concerns the scope of what is included within the definition of “waters of the United States,” not the scope of what is excluded.

433. Mr. Sulkin testified that the sampling events on August 25, 2014, and on February 6, 2015 (at NRS4) are the only sampling events where Mr. Sulkin documented exceedances of the domestic water supply standard (JX 14). (Trial Tr. (Vol. 2) at 120:21-121:21.)

434. Mr. Sulkin also testified that, on August 3, 2016, when he returned to the location where he collected samples on August 25, 2014, there were no exceedances of the domestic water supply standard. (Trial Tr. (Vol. 2) at 121:22-122:10; JX 14.)

435. Therefore, even if the Court were to find that Plaintiffs had proved an unlawful discharge and were to accept Mr. Sulkin's dubious sampling methodology, the Court finds that Plaintiffs evidence, at most, establishes exceedances of the domestic water supply standard in the August 25, 2014 and February 6, 2015 samples.

436. Accordingly, the Court concludes that Plaintiffs have failed to meet their burden of proving “*a state of either continuous or intermittent violation.*” *Tamaska v. City of Bluff City, Tenn.*, 26 F. App'x 482, 485 (6th Cir. 2002) (quoting *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 57 (1987); *see also Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 59 (1987) (“[C]itizens . . . may seek civil penalties only in a suit brought to enjoin or otherwise abate *an ongoing violation.*”); *Ailor v. City of Maynardville, Tenn.*, 368 F.3d 587, 590 (6th Cir. 2004) (“The CWA also does not permit citizen suits for wholly past violations.”) (internal quotation marks omitted); *Am. Canoe Ass'n v. Murphy Farms, Inc.*, 326 F.3d 505, 511 n.5 (4th Cir. 2003) (noting that *Gwaltney* has been interpreted by the Fourth Circuit “as requiring that plaintiffs, at the appropriate stage in the litigation, *actually prove ongoing violations*”).

**A. Remedies Available Under the CWA.**

437. In a citizen enforcement action “[u]nder § 1365(a), the district court has discretion to determine which form of relief is best suited, in the particular case, to abate current violations and deter future ones.” *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 192 (2000); 33 U.S.C. § 1365(a) (“The district courts shall have jurisdiction . . . to enforce such an effluent standard or limitation . . . and to apply any appropriate civil penalties under section 1319(d) of this title.”).

438. The CWA “authorizes district courts in citizen-suit proceedings to enter injunctions and to assess civil penalties, which are payable to the United States Treasury.” *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 175 (2000).

439. “[F]ederal courts should aim to ensure ‘the framing of relief no broader than required by the precise facts.’” *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 193 (2000) (quoting *Schlesinger v. Reservists Comm. to Stop the War*, 418 U.S. 208, 222 (1974)).

**B. Civil Penalties.**

440. “The Court has discretion whether to impose civil penalties in a citizen suit under the CWA.” *Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039, at \*8 (E.D. Va. Mar. 23, 2017) (citing *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 52-53 n.1 (1987)).

441. The CWA authorizes the imposition of civil penalties for past violations of the CWA (i.e., punitive civil penalties) and civil penalties designed to impel future compliance with the CWA (i.e., coercive civil penalties). *United States Department of Energy v. Ohio*, 503 U.S. 607, 613-14 (1992).

442. Although the Court previously concluded that Plaintiffs' claims for punitive civil penalties for past violations of the CWA may proceed, Mem. Op., Doc. 139 at PageID 5353, the trial record demonstrates that there is no basis for imposing such penalties because the Court finds that Plaintiffs' have failed to prove past violations of the CWA.

443. Even if the Plaintiffs had proved a past violation of the CWA, the Court would nevertheless conclude, for the same reasons set forth by the district court in *Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039 at \*8 (E.D. Va. Mar. 23, 2017), that "[c]ivil penalties are not appropriate here" because:

- TDEC has regulatory authority over the administration of the CWA in Tennessee, and the record in this case demonstrates that TVA has cooperated with the TDEC every step of the way in operating the Gallatin facility.
- TVA has provided TDEC with an enormous amount of information, including the information that Plaintiffs have used in this case as its exclusive factual evidence of what has occurred at Gallatin.
- TVA has secured the precise permits the TDEC has required it to obtain.
- TVA has been a good corporate citizen, not a chronic violator of water laws at Gallatin.

444. Similarly, the Court finds that there is no basis here for the imposition of coercive civil penalties.

445. To impel future compliance with the CWA, a district court may prescribe injunctive relief in a citizen enforcement action; "additionally or alternatively, the court may impose civil penalties payable to the United States Treasury." *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 173 (2000); *see also Ailor v. City of*

*Maynardville, Tenn.*, 368 F.3d 587, 590 (6th Cir. 2004) (“[C]ourts have held that any civil penalties imposed under the Act are payable to the United States Treasury.”); *Tamaska v. City of Bluff City, Tenn.*, 26 F. App’x 482, 485 (6th Cir. 2002) (“In such citizens’ suits, the Act limits the remedies available to injunctive relief and the assessment of civil penalties.”).

446. Under 33 U.S.C. § 1319(d), “[i]n determining the amount of a civil penalty the court shall consider the seriousness of the violation or violations, the economic benefit (if any) resulting from the violation, any history of such violations, any good-faith efforts to comply with the applicable requirements, the economic impact of the penalty on the violator, and such other matters as justice may require.”

447. The Court concludes that there is no basis for awarding future civil penalties here because TVA has not gained an economic benefit, and under the EIP developed pursuant to the Agreed Temporary Injunction in the ongoing State Enforcement Action, TVA is actively engaged in a good faith effort to comply with its Permit under the CWA and the TWQCA. (Agreed Temp. Inj., Doc. 42-2 at PageID 1470-73; First Status Report, Doc. 77-2 at PageID 2220-22; Second Status Report, Doc. 109-2 at PageID 4449-51; Third Status Report, Doc. 144-1 at PageID 5382-84; Fourth Status Report, Doc. 166-1 at PageID 6818-26; Fifth Status Report, Doc. 241-1 at PageID 9597-9609; Sixth Status Report, Doc. 241-2 at PageID 9611-9624.)

448. As of the bench trial in this action, TVA had spent nearly \$10 million in developing the EIP and performing the work required thereunder, and TVA estimates that it will cost \$28 million to complete the work required by the EIP and to prepare the Environmental Assessment Report, as required by the Agreed Temporary Injunction. (Trial Tr. (Vol. 4) at 111:1-4, 112:20-25; Kammeyer DT, Doc. 230-2 (TVA Ex. 208) at PageID 8709, 8712-13; JX 270.)



449. TVA further estimates that, to close the Ash Pond Complex at Gallatin in accordance with any order issued in the State Enforcement Action and/or in compliance with the Federal CCR Rule, TVA will be required to spend between \$200 million (closure-in-place) and \$2.37 billion (excavation and off-site disposal). (Trial Tr. (Vol. 4) at 111:13-114:16; Kammeyer DT, Doc. 230-2 (TVA Ex. 208) at PageID 8709-14; *see also* Final Ash Impoundment Closure Environmental Impact Statement, Part I – Programmatic Review (June 2016), JX 266 at 35-36.)

450. These amounts far exceed the civil penalty of \$100 per day awarded and affirmed in *Tamaska v. City of Bluff City, Tenn.*, 26 F. App’x 482, 484, 486 (6th Cir. 2002), which indexed for inflation, would be approximately \$150.00 per day in 2017 dollars.

451. Coercive civil penalties also are inappropriate here because, on October 27, 2016, TVA applied for a renewed NPDES Permit for the Gallatin facility (NPDES Permit No. TN0005428 – Supplemental Information for Permit Renewal (Oct. 27, 2016), JX 127 at 2-3)), and that application clearly discloses the potential for the discharges at issue in this citizen enforcement action (flows via seeps and flows via groundwater that is hydrologically connected to the Cumberland River).<sup>45</sup> *See United States v. Bay-Houston Towing Co.*, 197 F. Supp. 2d 788, 814 (E.D. Mich. 2002) (finding “that no civil penalty is warranted regarding the lack of an NPDES permit” because there was no demonstration of actual injury, the violation was not willful, “a permit application was pending and the permitting authorities were aware of the activity and “there was no showing that applicable effluent limitations had been exceeded”).

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<sup>45</sup> TDEC has received TVA’s Permit renewal application and will make a permitting decision based on the information presented in the renewal application (NPDES Permit No. TN0005428 – Supplemental Information for Permit Renewal (Oct. 27, 2016), JX 127 at 2-3). TDEC’s decision making will be informed by the EIP, the Environmental Assessment Report, and any corrective action under the Agreed Temporary Injunction (Doc. 42-2 at PageID 1473).

452. Because Plaintiffs have failed to prove violations of the CWA based on their Ash Pond Complex and Non-Registered Site claims, the Court concludes that there is no basis for the imposition of either punitive or coercive civil penalties here.

**C. Plaintiffs' Remaining Claims for Declaratory and Injunctive Relief Should Be Denied.**

453. Because Plaintiffs have failed to prove violations of the CWA with respect to the claims that were tried to this Court, there is no basis for declaratory or injunctive relief here.

454. Yet, even if Plaintiffs' had proved a technical violation of the CWA, there is no basis for granting Plaintiffs' "*demand [for] draconian injunctive relief.*" See *Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039 at \*9 (E.D. Va. Mar. 23, 2017) ("It [Sierra Club] wants the Court to order Dominion to move over three million tons of coal ash to a landfill that may not even be willing to accept it.").

455. "According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief" by demonstrating: "(1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction." *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388, 391 (2006) (citing *Weinberger v. Romero—Barcelo*, 456 U.S. 305, 311–313 (1982)).

456. Although a district court may prescribe injunctive relief in a citizen enforcement action to impel future compliance with the CWA, *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 173 (2000), "[i]t goes without saying that an injunction is an equitable remedy," nor is it "a remedy which issues as of course," or "to restrain an act the

injurious consequences of which are merely trifling.” *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 311–12 (1982) (internal citations and quotation marks omitted).

457. “Injunctive relief—especially mandatory injunctive relief—is a ‘drastic and extraordinary’ remedy, available only in unusual situations. *Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039, at \*9 (E.D. Va. Mar. 23, 2017) (quoting *Monsanto Co. v. Geerston Seed Farms*, 561 U.S. 139, 165 (2010)).

458. The Supreme Court “has repeatedly held that the basis for injunctive relief in the federal courts has always been irreparable injury and the inadequacy of legal remedies.” *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 311 (1982).

459. “In exercising their sound discretion, courts of equity should pay particular regard for the public consequences in employing the extraordinary remedy of injunction.” *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 312 (1982).

460. “The grant of jurisdiction to ensure compliance with a statute hardly suggests an absolute duty to do so under any and all circumstances, *and a federal judge sitting as chancellor is not mechanically obligated to grant an injunction for every violation of law.*” *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 313 (1982).

**1. Plaintiffs failed to show irreparable injury.**

461. For 60 years, TVA has disposed of CCRs at both the Non-Registered Site (1956-1970) and the Ash Pond Complex (1970-2016), (J. Stip., Doc. 226 (JX 278) at PageID 8325-26 ¶¶ 7, 12), and Plaintiffs offered no evidence at trial to support their claim that there has been irreparable harm to the Cumberland River. In fact, the publicly-available data does not show harm to the Cumberland River, much less irreparable harm.

462. In reissuing the Permit in 2012, TDEC itself concluded that, based on TVA's biomonitoring results, the "data demonstrates that *groundwater flow has not affected the maintenance of a balanced, indigenous [aquatic] population in the vicinity of the plant.*" (Permit, Doc. 1-2 (JX 102) at PageID 106.)

463. On June 30, 2014, in connection with the public comment process for the NRL Landfill, TDEC responded to comments submitted by Plaintiffs' environmental consultant and trial witness, Mark Quarles. (Trial Tr. (Vol. 1) at 210:10-211:25, 216:11-220:19.) TDEC also responded to other public comments that it received from Mr. Quarles on behalf of Sierra Club, and Mr. Quarles' comments and TDEC's responses are included in the public record.<sup>46</sup> (Trial Tr. (Vol. 1) at 216:11-25, 219:10-23.)

464. One of Mr. Quarles' comments alleged that, at TVA coal-fired power plants, localized fish populations had been adversely affected by ongoing legacy releases to surface water due to selenium. (Trial Tr. (Vol. 1) at 217:2-11.)

465. TDEC responded that "[a]quatic biological monitoring is required at all Tennessee fossil plants, and *years of TVA research show a healthy community of fish in the vicinity of the Gallatin Fossil Plant.*" (Trial Tr. (Vol. 1) at 217:12-19.)

466. Subsequent to 2014, surface water and sediment sampling data show that there is no measurable effect on water quality posed by the Gallatin facility on the Cumberland River or in the coves adjacent to the facility. (JX 99 at 4; JX 274 ("Water quality analysis indicated that values for water temperature, conductivity, and acidity in downstream profiles were slightly

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<sup>46</sup> See *supra* note 21.

higher than those upstream, but values for all parameters at both sites were within acceptable ranges.”.)

467. Extensive biomonitoring studies have been conducted in the vicinity of the Gallatin facility, and these studies demonstrate that there is no adverse biological effect on the Cumberland River posed by the presence of the Gallatin facility. (JX 274 at 18-29.)

468. In early 2016, TVA concluded that based on initial sediment sampling performed in Cove 1 adjacent to the Non-Registered Site and “on the results of extensive toxicity testing performed for the Kingston Ash Recovery Project . . . it is unlikely that the degree of ash contamination of sediments in Cove 1 poses an ecological risk.” (JX 99 at 4.)

469. Additional support for the conclusion that the mere presence of coal ash in river sediment does not pose an ecological risk was published by EPA in early 2017:

***Environmental data collected from 2009-2015 shows the fish community, benthic macroinvertebrates (bugs), sediment quality and tree swallow colonies have recovered to baseline conditions that existed prior to the release of 5.4 million cubic yards (CYs) of coal ash to the environment on December 22, 2008.***

EPA Region 4 New Release, Watts Bar Reservoir Ecosystem Adjacent to TVA Kingston Facility Returns to Baseline Conditions (Jan. 12, 2017), <https://www.epa.gov/newsreleases/watts-bar-reservoir-ecosystem-adjacent-tva-kingston-facility-returns-baseline> (last visited Apr. 14, 2017).

470. The scientific validity of the results of TVA’s environmental investigation at Gallatin were confirmed by the un rebutted testimony of Dr. Neil Carriker:

[T]he samples and field data collected by TVA for the environmental investigation at Gallatin have been and are being collected and managed under carefully controlled procedures, analyses have been and are being performed with specific quality objectives in mind, and the resulting data is validated and managed in a way that ensures both high data quality and high confidence in data integrity.

(Trial Tr. (Vol. 3) at 154:8-15; *see also* Carriker DT, Doc. 158-6 (TVA Ex. 207) at PageID 5842-49.)

471. Dr. Carriker's testimony also highlighted the significant deficiencies in the sampling methodologies utilized by Plaintiffs' witnesses (Carriker DT, Doc. 158-6 (TVA Ex. 207) at PageID 5849-59), and Dr. Carriker concluded "that nearly any legitimate scientist would conclude that TVA's data would be more useful in supporting resource management decisions" than the data collected by Plaintiffs. (Trial Tr. (Vol. 3) at 155:12-16.)

472. TVA's conclusions also are supported by a wealth of publicly-available data.

473. For example, water quality data published by the local utilities which source drinking water from the Cumberland River/Old Hickory Lake downstream of the ash disposal facilities at Gallatin and which are responsible to the public for safe drinking water show that the Gallatin facility is not harming drinking water drawn from the Cumberland River/Old Hickory Lake.

- **Gallatin Public Utilities:** "*We are proud to announce that our water system meets or exceeds all water quality standards, as established by State and Federal Regulatory agencies. . . . Gallatin's drinking water, which is surface water, is pumped through an intake on the Cumberland River – Old Hickory Lake.*" (JX 255.)<sup>47</sup>
- **White House Utility District:** "Your water, which is surface water comes from Old Hickory Lake. . . . *The water produced by White House Utility District meets or exceeds ALL of the nation's water quality standards required by the Environmental Protection Agency as well as the State of Tennessee.*" (JX 256.)<sup>48</sup>

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<sup>47</sup> Gallatin Public Utilities, *2014 Annual Water Quality Report*, available at <http://www.gallatinutilities.com/text/Water%20Quality/WQ%202014.pdf> (last visited Apr. 14, 2017).

<sup>48</sup> White House Utility District, *2016 Water Quality Report*, available at <https://www.whud.org/waterquality.pdf> (last visited Apr. 14, 2017) (underlining in original).

- **West Wilson Utility District:** “Is my drinking water safe? Yes, in 2014, we conducted many tests for contaminants that could possibly be in our drinking water. . . .The West Wilson Utility District water source is surface water taken from Old Hickory Lake, which is part of the Cumberland River system.” (JX 257.)<sup>49</sup>
- **Hendersonville Utility District:** “[O]ur water meets all of the Environmental Protection Agency’s (EPA’s) health standards. . . . *The water delivered to your home is surface water from Old Hickory Lake, which is fed by the Cumberland River. We are fortunate that the Old Hickory Lake source is known for its high-quality ‘raw’ water – or the water directly from the lake before treatment.*” (JX 258.)<sup>50</sup>
- **Nashville Metro Water Services:** “We are pleased to deliver our 2015 Consumer Confidence Report, *which shows your water meets or exceeds all of the United States Environmental Protection Agency (EPA) health standards and all state and federal requirements.*”  

. . .

“Nashville’s water supply comes from the Cumberland River, *which provides a steady and excellent source of water* for both the K.R. Harrington and Omohundro filtration plants.”  

. . .

“*Nashville is fortunate to have the Cumberland River as its abundant supply of water. The EPA has given the Cumberland River a good grade for water quality.*” (JX 259.)<sup>51</sup>

474. Pursuant to its obligations under Section 303(d) of the Clean Water Act, TDEC compiles a biennial report “of the streams and lakes that are ‘water quality limited’ or are expected to exceed water quality standards in the next two years and need additional pollution controls. Water quality limited streams are those that have one or more properties that violate water quality standards . . . [and] are considered impaired by pollution and not fully meeting

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<sup>49</sup> West Wilson Utility District, *Consumer Confidence Report 2014*, available at [http://www.westwilsonutility.com/uploads/CCR\\_Report\\_2014.htm](http://www.westwilsonutility.com/uploads/CCR_Report_2014.htm) (last visited Apr. 14, 2017).

<sup>50</sup> Hendersonville Utility District, *2016 Water Quality Report*, available at <http://hendutil.net/CCR.pdf> (last visited Apr. 14, 2017).

<sup>51</sup> Nashville Metro Water Services, *2015 Consumer Confidence Report* at 2, 4-5, available at <http://www.nashville.gov/Portals/0/SiteContent/WaterServices/docs/reports/CCR2015.pdf> (last visited Apr. 14, 2017).

designated uses.” *Year 2016 303(d) List Draft Version* (July 2016) (“*Year 2016 303(d) List Draft*”) at 1, available at [https://tn.gov/assets/entities/environment/attachments/wr\\_wq\\_303d-2016-draft.pdf](https://tn.gov/assets/entities/environment/attachments/wr_wq_303d-2016-draft.pdf) (last visited Apr. 14, 2017); *Year 2014 303(d) Final Version* (May 2016) (“*Year 2014 303(d) List Final*”) at 1, available at [http://www.tn.gov/assets/entities/environment/attachments/wr\\_wq\\_303d-2014-final.pdf](http://www.tn.gov/assets/entities/environment/attachments/wr_wq_303d-2014-final.pdf) (last visited Apr. 14, 2017) (same).

475. Significantly, Old Hickory Lake is **not** on the State of Tennessee’s 303(d) List of impaired waters for 2014 **or** 2016. (*Year 2014 303(d) List Final* at 22-24; *Year 2014 303(d) List Draft* at 22-24.)

476. The State of Tennessee’s 303(d) assessment of the water quality of Old Hickory Lake is consistent with TVA’s findings:

***Water quality samples show that this stretch of Old Hickory Reservoir [adjacent to Gallatin] meets all requirements for domestic and industrial purposes; propagation and maintenance of fish and other aquatic life; recreation in and on the water, including the safe consumption of fish and shellfish; livestock watering and irrigation; navigation; generation of power; propagation and maintenance of wildlife; and the enjoyment of the scenic and aesthetic qualities of water.***

*Environmental Stewardship at Gallatin*, <https://www.tva.gov/Energy/Our-Power-System/Coal/Environmental-Stewardship-at-Gallatin> (last visited Apr. 14, 2017).

477. Publicly-available information from the Corps of Engineers also shows that the Gallatin facility is not impacting the Cumberland River/Old Hickory Lake.



478. In connection with the Corps' Old Hickory Lake Master Plan (Jan. 13, 2016), the Corps performed an Environmental Assessment ("Old Hickory EA") which addresses the existing conditions of Old Hickory's aquatic environment.<sup>52</sup>

479. The Corps' Environmental Assessment notes that "[w]ater quality and aquatic resources within the [Old Hickory] lake have been termed as generally good." (Old Hickory EA at 24.)

480. The Corps has found that "[l]ocal point and non-point source runoff has minor effect to the water quality of Old Hickory due to the short time frame water is retained within the reservoir." (*Id.* at 7.)

481. This finding is significant because it validates TDEC's determination when it issued the Gallatin NPDES Permit in 2012 "*that discharges from the ash pond do not cause or contribute to aquatic toxicity.*" (Permit, Doc. 1-2 (JX 102) at PageID 102.)

482. As part of its decision to reissue the Permit in 2012, TDEC found that "actual effluent concentrations are substantially lower than the projected concentration which would cause aquatic toxicity." (Permit, Doc. JX 102 at PageID 102) (underlining in original).)

483. For the foregoing reasons, the Court finds that "no evidence shows that any injury, much less an irreparable one, has occurred to health or the environment." *Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039, at \*9 (E.D. Va. Mar. 23, 2017).

484. Therefore, the Court concludes that Plaintiffs failed to meet their burden of showing irreparable harm, a factor which "weigh[s] against the drastic injunctive relief sought by"

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<sup>52</sup> *Environmental Assessment Proposed Master Plan Update Old Hickory Lake* (August 2015), available at <http://www.lrn.usace.army.mil/Portals/49/docs/Lakes/Old%20Hickory/Master%20Plan%20Files/OLD%20MP%20Update%20EA%20for%20release.pdf> (last visited Apr. 14, 2017).

Plaintiffs. *Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039, at \*9 (E.D. Va. Mar. 23, 2017).

**2. No remedy in equity is warranted, and Plaintiffs' requested remedy (closure-by-removal) would impose a substantial hardship on TVA and its ratepayers and, therefore, would not be in the public interest.**

485. The CWA does not foreclose the exercise of the court's discretion and does not require "a district court to issue an injunction for any and all statutory violations;" on the contrary, the CWA "permits the district court to order that relief it considers necessary to secure prompt compliance with the" CWA. *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 320 (1982).

486. "The more relevant and cogent line are the cases which hold that injunctive relief is not appropriate under traditional equitable principles even though the activity is being carried out either in the absence of a permit or *while an application is pending*." *United States v. Bay-Houston Towing Co.*, 197 F. Supp. 2d 788, 795 (E.D. Mich. 2002) (citing *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 312-13 (1982)).

487. Here, the record shows that TVA, on October 27, 2016, applied for a renewed NPDES Permit for the Gallatin facility, and TVA's application clearly discloses the potential for the discharges at issue in this citizen enforcement action (flows via seeps and flows via groundwater that is hydrologically connected to the Cumberland River). (NPDES Permit No. TN0005428 – Supplemental Information for Permit Renewal (Oct. 27, 2016), JX 127 at 2-3.)

488. Plaintiffs' claims for injunctive relief, therefore, are due to be denied because TVA has applied for a permit that would regulate the very same discharges alleged in this lawsuit. *See United States v. Bay-Houston Towing Co.*, 197 F. Supp. 2d 788, 795 (E.D. Mich. 2002).

489. The Court further concludes that Plaintiffs' claims for injunctive relief are due to be dismissed under principles of comity and federalism. See *Rizzo v. Goode*, 423 U.S. 362, 378-79 (1976) ("When a plaintiff seeks to enjoin the activity of a government agency, even within a unitary court system, his case must contend with the well-established rule that the Government has traditionally been granted the widest latitude in the dispatch of its own internal affairs.") (internal quotation marks omitted); *Kendrick v. Bland*, 740 F.2d 432, 437 (6th Cir. 1984) ("[A]ppropriate consideration must be given to principles of federalism in determining the availability and scope of equitable relief." (quoting *Rizzo v. Goode*, 423 U.S. 362, 379 (1976))); *United States v. City of Detroit*, No. 77-71100, 2013 WL 1282021, at \*10 (E.D. Mich. Mar. 27, 2013) (finding, in a CWA case, that "remedies that override state or local law should be narrowly tailored and that, to the extent possible, local officials should at least have the opportunity to devise their own solutions to remedy a violation of federal law.").

490. With respect to comity, the Court notes that the State Enforcement Action preceded the Federal lawsuit, that the Plaintiffs are Intervenor in the State Enforcement Action, and that the Plaintiffs (there Intervenor) seek remedies in the State Enforcement Action that are substantially similar to the remedies that they are seeking in this Federal lawsuit. Mem. Op., Doc. 139 at PageID 5334-35; see also (State Compl., Doc. 13-5 at PageID 320-21.)

491. The remedies requested in the State Enforcement Action, include a: "(1) a permanent injunction establishing a schedule for the defendant's [TVA's] compliance with the SWDA, the TWQCA, and the rules and regulations thereunder and (2) an order and judgment from this [Chancery] Court assessing civil penalties against the defendant [TVA] for violations of the SWDA and the TWQCA." (Doc. 13-5 at PageID 320.)

492. In ruling on TVA's motion to dismiss (Doc. 12) Plaintiffs' Claims under CWA's diligent prosecution bar, 33 U.S.C. § 1365(b)(1)(B), the Court concluded that the "diligent prosecution bar only applies to those issues sought to be addressed in a citizen action that overlap with those issues sought to be addressed by the government's suit." Mem. Op., Doc. 139 at PageID 5340 (quoting *United States v. Bd. of Cnty. Comm'rs of Hamilton Cnty., Ohio*, 1:02 CV 00107, 2005 WL 2033708 at \*11 (S.D. Ohio Aug. 23, 2005)).

493. Specifically, the Court found that Plaintiffs' allegations in the Federal lawsuit relating to the "unlawful discharge of pollutants to the Cumberland River from the Non-Registered Site; and unlawful discharge of pollutants from the Ash Pond Complex [to the Cumberland River] through hydrologic flows that cannot be characterized as consisting of seeps alone" were not overlapping with claims alleged in the State Enforcement Action and therefore were not subject to dismissal for failure to state a claim under the diligent prosecution bar. Mem. Op., Doc. 139 at PageID 5346.

494. Nevertheless, the Court recognized "that the non-overlapping allegations are still closely connected" with the effluent standards and limitations being prosecuted in the State Enforcement Action. Mem. Op., Doc. 139 at PageID 5346.

495. The evidentiary record, as distinguished from allegations made by Plaintiffs in their pleadings, shows that the claims raised in the Federal and State lawsuits overlap significantly, and the interconnectedness of the claims in both actions is even more substantial with respect to remedies and the facts and policy considerations necessary to fashion an appropriate remedy, if any.

496. Further, by seeking an order in this Federal action that would require TVA to "[r]emove[] all existing coal combustion byproducts from all of the Gallatin Plant coal ash ponds

and stilling ponds within a reasonable amount of time and store[] them in an appropriately lined industrial solid waste landfill facility away from the Cumberland River, or any other water of the United States, with appropriate monitoring,” (Compl., Doc. 1 at PageID 53), Plaintiffs are, in effect, asking this Court to preempt the earlier-filed State Enforcement Action and to order a remedy before the State of Tennessee and TDEC have had the opportunity to develop a corrective action plan for Gallatin. (*See* Agreed Temp. Inj., Doc. 42-2 at PageID 1470-73.)

497. Therefore, Plaintiffs’ requested remedy offends principles of comity and federalism. *See Kendrick v. Bland*, 740 F.2d 432, 437 (6th Cir. 1984); *United States v. City of Detroit*, No. 77-71100, 2013 WL 1282021, at \*10 (E.D. Mich. Mar. 27, 2013).

498. Moreover, in the State Enforcement Action, the Davidson County Chancery Court entered an Agreed Temporary Injunction that “require[ed] TVA to ‘develop an Environmental Investigation Plant (EIP) for the [Gallatin Plant] and submit it to TDEC within 60 days . . .’ [and] directed TVA to include in the EIP ‘a schedule of the work to be performed to fully characterize the hydrology and geology of the [Gallatin Plant] and identify the extent of soil, surface water, and groundwater by CCR [Coal Combustion Residual] material.’” Mem. Op., Doc. 139 at PageID 5335.

499. TVA also is required to periodically inform the Chancery Court of the status of work being performed under the EIP. (Doc. 77-1 at PageID 2213 ¶ 3.) Six status reports have been submitted regarding that work, and these reports show that substantial work has been and continues to be performed under the EIP, and that TDEC and TVA continue to develop information that will allow the State to determine an appropriate remedy if there is a violation of the NPDES permit. (Agreed Temp. Inj., Doc. 42-2 at PageID 1470-73; First Status Report, Doc. 77-2 at PageID 2220-22; Second Status Report, Doc. 109-2 at PageID 4449-51; Third Status

Report, Doc. 144-1 at PageID 5382-84; Fourth Status Report, Doc. 166-1 at PageID 6818-26; Fifth Status Report, Doc. 241-1 at PageID 9597-9609; Sixth Status Report, Doc. 241-2 at PageID 9611-9624.) Mem. Op., Doc. 139 at PageID 5346.

500. This was confirmed by the Assistant Attorney General for the State of Tennessee, Emily Vann, during a colloquy with the Court during trial:

MS. VANN: The current status of the State action is we are proceeding with the environmental investigation at the Gallatin site. . . .

. . . .

MS. VANN: The EIP has now been approved in total. It covers 16 investigations, separate investigations that have separate sampling analysis plans to go along with those. ***It's a massive undertaking.*** Data is starting to come in.

THE COURT: ***For the ash pond or the nonregistered site?***

MS. VANN: ***For the entire site.*** So it covers the Ash Pond Complex. And in the State lawsuit, the Ash Pond Complex includes the three stilling ponds as well. ***So it's the entire peninsula, as well as some offsite sampling north of the facility,*** I believe. We've asked TVA to do some additional groundwater sampling if they can locate potential private wells that are still being used. That's part of the EIP process. . . .

. . . .

MS. VANN: The purpose of the environmental investigation is, once the environmental investigation is complete - - TDEC is receiving data as it comes in. TVA is also reviewing that data. - - TVA will prepare an environmental assessment report that they present to the State. ***The State will review that, along with its own interpretation of the data, and ultimately the State will reach a corrective action determination.***

(Trial. Tr. (Vol. 3) at 204:9-206:13.)

501. Both Plaintiffs and TVA concurred with Ms. Vann's characterization of the scope of the State Enforcement Action and the work being performed under the Agreed Temporary Injunction and the EIP. (Trial Tr. (Vol. 3) at 208:8-20.)

502. As of the trial in this federal action, TVA had spent nearly \$10 million in developing the EIP and performing work required under the EIP. (See JX 270 at 3.)

503. Based on the record in this action and information provided by the State of Tennessee that its contemplated corrective action will cover the entire Gallatin site, including the Ash Pond Complex and the Non-Registered Site, it appears to the Court that the State Enforcement Action seeks to address the same remedy issues that are before the Court in this CWA citizen suit. *See* Mem. Op., Doc. 139 at PageID 5340 (holding that the “‘diligent prosecution bar only applies to those issues sought to be addressed in a citizen action that overlap with those issues sought to be addressed by the government’s suit’” (quoting *United States v. Bd. of Cnty. Comm’rs of Hamilton Cnty., Ohio*, 1:02 CV 00107, 2005 WL 2033708 at \*11 (S.D. Ohio Aug. 23, 2005))).

504. Policy and cost considerations also weigh against Plaintiffs’ request for injunctive relief.

505. “In 2009, TVA committed to convert all of its wet coal ash management facilities to dry ash management at a potential cost of \$1.5 to \$2 billion. At Gallatin, TVA is constructing a new dry ash landfill . . . and is working toward closure of the active wet pond ash management system to comply with” the EPA’s Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities (“CCR Rule”). *Environmental Stewardship at Gallatin* <https://tva.com/Energy/Our-Power-System/Coal/Environmental-Stewardship-at-Gallatin> (last visited Apr. 14, 2017); *see also* Permit, Doc. 1-2 (JX 102) at PageID 114.)

506. The CCR Rule became effective on October 14, 2015. 80 Fed. Reg. 21302 (Apr. 17, 2015).

507. The CCR Rule provides for two alternative closure methods—closure by removal or closure in place. 40 C.F.R. § 257.102 (“Closure of a . . . CCR surface impoundment . . . must be completed either by leaving the CCR in place and installing a final cover system or through

removal of the CCR and decontamination of the CCR unit.”).

508. In the preamble to the final rule, EPA acknowledged that “most facilities will likely not clean close their CCR units given the expense and difficulty of such an operation” and that “***both methods of closure can be equally protective, provided they are conducted properly.***” 80 Fed. Reg. 21,302, 21,412 (Apr. 17, 2015). Moreover, “the final rule allows the owner or operator to determine whether clean closure or closure with waste in place is appropriate for their particular unit.” 80 Fed. Reg. 21,302, 21,412.

509. Because “[a]n injunction is an exercise of a court’s equitable authority, ***to be ordered only after taking into account all of the circumstances that bear on the need for prospective relief,***” *Salazar v. Buono*, 559 U.S. 700, 714 (2010), the Court concludes that equity requires consideration of TVA’s obligations under the CCR Rule. Moreover, the Supreme Court has cautioned that

***[b]ecause injunctive relief is drafted in light of what the court believes will be the future course of events, . . . a court must never ignore significant changes in the law or circumstances underlying an injunction lest the decree be turned into an instrument of wrong.***

*Salazar v. Buono*, 559 U.S. 700, 714–15 (2010) (internal quotation marks omitted). Indeed, without considering TVA’s legal obligation to comply with the CCR Rule, crafting an injunction order in “reasonable detail” would be problematic. *See* Fed. R. Civ. P. 65(d) (“Every order granting an injunction . . . must . . . describe in reasonable detail—and not by referring to the complaint or other document—the act or acts restrained or required.”).

510. “Closure in place involves dewatering the impoundments, recontouring the CCRs in the impoundment, and capping the impoundment with a geosynthetic liner, borrow material, soil, and vegetation to prevent precipitation and stormwater from flowing into and through the dewatered CCRs.” (Trial Tr. (Vol. 4) at 108:12-19; Kammeyer DT, Doc. 230-2 (TVA Ex. 208) at



PageID 8706.)

511. “Closure by removal involves dewatering the CCR, excavating the CCR, drying the CCR sufficiently to move it, moving the CCR material to a permitted and lined landfill, and using borrow material to recontour the former impoundment, fill in the hole, and provide a foundation for vegetation . . . .” (Trial Tr. (Vol. 4) at 108:20-25; Kammeyer DT, Doc. 230-2 (TVA Ex. 208) at PageID 8706.)

512. TVA has prepared a Final Programmatic Environmental Impact Statement to address the closure of CCR units at TVA’s coal-fired power plants, and therein TVA specifically addresses potential environmental impacts to groundwater and surface water associated with closure-in-place and closure-by-removal. (TVA EIS Part I – Programmatic Review (June 2016), JX 266 at 58-76.)<sup>53</sup> Following EPA’s review, “EPA concur[ed] with the TVA’s preferred alternative to close identified facilities in place according to the CCR Rule.” (EPA Letter Re: Final Programmatic Environmental Impact Statement (FPEIS for Ash Impoundment Closure (Part I – Programmatic NEPA Review) (June 21, 2016), JX 267.)

513. The Court finds that, as explained in the direct testimony statement of TVA’s certifying qualified professional engineer, Gabriel Lang (JX 191 at 2; Trial Tr. (Vol. 3) at 117:4-6),<sup>54</sup> TVA’s closure-in-place plan (JX 190) for the Gallatin Ash Pond Complex is the most

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<sup>53</sup> See *Closure of Coal Combustion Residual Impoundments*, available at <https://www.tva.gov/Environment/Environmental-Stewardship/Environmental-Reviews/Closure-of-Coal-Combustion-Residual-Impoundments> (last visited April 14, 2017).

<sup>54</sup> The CCR Rule requires that a qualified professional engineer certify compliance with the technical requirements of the CCR Rule. 40 C.F.R. § 257.102. The CCR Rule defines “Qualified Professional Engineer” as “an individual who is licensed by a state as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make the specific technical certifications required under this subpart. Professional engineers making these certifications must be currently licensed in the

feasible closure method from an engineering and environmental perspective and is sufficient to address the alleged CWA violations at issue in this citizen enforcement action. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8565-8579; *see also* JX 188, JX 189; JX 269.)

514. Mr. Lang explained that TVA's proposed plan for closure-in-place would (1) meet the requirements of the CCR Rule; (2) allow closure of the ash ponds to be initiated and achieved in a shorter time frame (as compared to closure-by-removal); (3) reduce the "environmental and safety impacts associated with off-site truck traffic, including greenhouse gas emissions, traffic accidents and fatalities, and visual and noise disturbance effects to adjacent communities;" and (4) minimize the potential for sinkhole formation that could result from the excavation required for closure-by-removal. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8577-78.)

515. TVA's programmatic Environmental Impact Statement noted similar concerns associated with closure-in-place versus closure-by-removal:

The quantity of dump trucks required to move this amount of material is potentially very large, and due to logistical considerations and the availability of equipment, it is likely that closure of the large ash impoundments would require significantly more than 2 years for completion. Based on the estimates in Figure 2-7, the number of daily round-trip truck trips would have to increase from the estimated maximum of 350 per day for the Closure-in-Place Alternative to transport borrow material, *to several thousand per day* for the larger impoundments to transport CCR and borrow material.

(TVA EIS Part I – Programmatic Review at 46 (June 2016), JX 266 at 46.)

516. TVA's karst engineer, Dr. Kutschke, testified that "karst terrain at Gallatin does not preclude closure in place of Ash Pond A, Middle Pond A, Bottom Ash Pond, and Ash Pond

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(. . . continued)

state where the CCR unit(s) is located." 40 C.F.R. § 257.53.

E.” (Trial Tr. (Vol. 3) at 201:24-203:1.) Dr. Kutschke also testified that “closure in place provides [a] significant benefit associated with limiting excavation into ash and minimizing surface water/stormwater infiltration.” (Trial Tr. (Vol. 3) at 201:24-203:1.)

517. The Court finds that Plaintiffs failed to rebut the testimony of TVA’s witnesses regarding the efficacy of closure-in-place and did not offer any proof showing that closure-in-place is insufficient to address Plaintiffs’ alleged CWA violations.

518. In fact, the Court concludes that, based on EPA’s findings, Plaintiffs’ trial witnesses were not qualified to certify whether TVA’s closure plans comply with the technical requirements of the CCR Rule.<sup>55</sup>

519. The Court also finds that, according to Mr. Lang’s testimony regarding closure-in-place, “[d]ewatering/decanting will be an essential component of the ash pond closure process.” (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8576.)

520. This is a significant fact, and as set forth by EPA in the preamble to the CCR Rule, it appears to the Court that dewatering will address many, if not all, of Plaintiffs’ remedial concerns:

EPA’s risk assessment shows that the highest risks are associated with CCR surface impoundments due to the hydraulic head imposed by impounded water.

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<sup>55</sup> Specifically, in developing the CCR Rule, EPA “disagree[d] with comments that professional geologists or geoscientists should be added to the list of those professionals that have expertise and authority to certify compliance with certain RCRA subtitle D regulatory requirements.” 80 Fed. Reg. 21302, 21337 (Apr. 17, 2015). EPA “re-considered the qualifications necessary to certify compliance with the technical requirements of the rule and . . . limit[ed] compliance certifications to qualified professional engineers only. . . . ***EPA is not convinced that hydrologists or geologists licensed by a state are held to the same standards as a professional engineer licensed by a state licensing board.*** . . . Consequently, hydrologists, geologists, or other professionals may only perform analyses that underlie the certification, ***but it is the responsibility of a qualified professional engineer to make the actual certification.***” 80 Fed. Reg. 21302, 21337-38 (Apr. 17, 2015).

***Dewatered CCR surface impoundments will no longer be subjected to hydraulic head so the risk of releases, including the risk that the unit will leach into the groundwater, would be no greater than those from CCR landfills.***

80 Fed. Reg. 21302, 21342 (Apr. 17, 2015).

521. The Court also finds that Plaintiffs' requested remedy of closure-by-removal is not feasible because Plaintiffs offered no evidence whatsoever to address the substantial engineering, cost, environmental, and safety considerations that closure-by-removal would engender. *See Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039, at \*9 (E.D. Va. Mar. 23, 2017) ("The Sierra Club's evidence in support of its proposed remedy is remarkable only for what it does not show. ***The plaintiff has offered no credible evidence of the cost of this removal. It has offered no credible evidence of how long it would take to move the ash. It has offered no credible evidence of how the ash will safely travel across Tidewater Virginia.***").

522. According to Mr. Lang's testimony, the Ash Pond Complex Closure Area contains approximately 11.1 million cubic yards of ash material over an approximately 389 acre area" and "[t]he excavation and disposal of this amount of material presents significant engineering challenges." (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8579-80.) Specifically, Mr. Lang testified that, with the exception of the Kingston Recovery Project, he was not aware of any completed ash relocation projects of similar magnitude to the Gallatin site (i.e., removal and offsite disposal of 11.1 million cubic yards of ash). (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8579-80; Trial Tr. (Vol. 3) at 104:3-7; 108:20-25.)

523. Mr. Lang testified that excavation likely would increase the risk of karst activity and associated safety and environmental concerns. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8579-80.) Dr. Kutschke also testified that closure-by-removal would increase the risk of

triggering karst activity. (Trial Tr. (Vol. 3) at 201:24-203:7.)

524. Mr. Lang testified that, based on the size of the ponds and the amount of ash that would have to be removed, closure-by-removal would be impractical because it would take approximately 18-24 years to complete closure, which would not be consistent with the CCR Rule requirement that closure be achieved in the shortest amount of time consistent with recognized and generally-accepted good engineering practices. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8580.)

525. According to Mr. Lang, coal ash volume is a significant factor in assessing closure options (Trial Tr. (Vol. 3) at 132:5-134:15), and Mr. Lang testified that the reason coal ash volume is important is because “[i]f you’re going to remove ash, you have to have some place to put it. And it has to be into a lined facility” (Trial Tr. (Vol. 3) at 133:17-22).

526. Mr. Lang testified that, “in order to store this volume, if you’re talking 11 million yards, you’re looking at a 100-plus acre landfill facility . . . that means either putting in a significant infrastructure to manage that. A lot of trucks on the road. Numbers ranging from 50 to 100 trucks a day for 20 years [through] the surrounding community.” (Trial Tr. (Vol. 3) at 134:2-8).

527. Mr. Lang testified that, for the aforementioned reasons, “large ash ponds, similar in size and ash quantity to the Gallatin Ash Pond Complex, in the southeast for Duke Energy, Alabama Power, and Georgia Power are planned to be closed via closure-in-place and not via excavation.” (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8580; *see also* Trial Tr. (Vol. 3) at 108:20-25.)

528. For comparison, Plaintiffs in this action demand that TVA excavate and remove 11 million cubic yards of coal ash from Gallatin is more than *five times* the volume of coal ash at

issue in *Sierra Club*. 2017 WL 1095039, at \*9 (“three million tons of coal ash”).

529. Plaintiffs offered no proof regarding a feasible disposal site for the coal ash if the Court were to order excavation at Gallatin, and Plaintiffs completely failed to address the collateral environmental and safety concerns and public infrastructure impacts associated with trucking the ash away from Gallatin. *See Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039, at \*9 (E.D. Va. Mar. 23, 2017).

530. As to the Non-Registered Site, the evidence shows that TVA is working on a plan for a cap in place closure system that appears capable of significantly reducing surface water infiltration which will decrease loading to the Cumberland River and result in a corresponding benefit to the Cumberland River. (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8581-84; JX 160 at 4; Trial Tr. (Vol. 4) at 57:5-58:3; Perry DT, Doc. 230-1 (TVA Ex. 209) at PageID 8695-98.)

531. In sum, the Court finds that the common-sense observation made by the court in *Sierra Club v. Va. Elec. & Power Co.*, is equally applicable here:

***The plaintiff[s] . . . have not considered the simple fact known by everyone who has ever dug a hole and moved dirt around in his or her yard. When one digs a hole, some of the dirt slops over and does not go where it is supposed to wind up. How much spillage will occur when someone moves three million tons of ash? How many truck wrecks will occur with resulting coal ash dropped on the roads, and perhaps on the motorists?***

2017 WL 1095039, at \*9. At trial, Plaintiffs offered no evidence addressing these important questions.

532. The Court finds that cost considerations also render Plaintiffs’ requested remedy of closure-by-removal infeasible.

533. TVA estimates that the cost of closure-by-removal (excavation and disposal offsite) at Gallatin would be approximately \$2 billion and that the time to complete closure-by-

removal would be 35 to 40 years. (Trial Tr. (Vol. 4) at 113:15-114:16; Kammeyer DT, Doc. 230-2 (TVA Ex. 208) at PageID 8709-8714.)

534. In contrast, TVA estimates that the cost of closure-in-place would be approximately \$230 million (Trial Tr. (Vol. 4) at 113:20-114:9; Kammeyer DT, Doc. 230-2 (TVA Ex. 208) at PageID 8713), and would take approximately 8 years (Lang DT, Doc. 229-1 (TVA Ex. 205) at PageID 8575-76).

535. According to Mr. Kammeyer, TVA's Vice President of Civil Projects, CCP Management, and Equipment Support Services:

***The estimated increased costs associated with excavation and relocation, approximately 1.8 billion, are significant by any standard, and, if that is the selected option, the increased cost would be paid by TVA's ratepayers.***

(Trial Tr. (Vol. 4) at 114:13-16; Kammeyer DT, Doc. 230-2 (TVA Ex. 208) at PageID 8713-14.)

536. The Court finds that TVA's "estimated cost of excavation and off-site relocation would be approximately nine times the estimated cost of closure in place" (Kammeyer DT, Doc. 230-2 (TVA Ex. 208) at PageID 8713), that the hardships of the proposed injunction are enormous (given the absence of any evidence of contamination or harm to the Cumberland River), and that the proposed injunction requested by Plaintiffs will entail decades of effort costing TVA's ratepayers (i.e., the citizens of the Tennessee and the Tennessee Valley) billions of dollars in exchange for very little return. *See Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039, at \*9 (E.D. Va. Mar. 23, 2017).

537. Therefore, the Court finds that the Plaintiffs requested remedy—excavation and removal offsite of 11 million cubic yards of coal ash— is not warranted by the evidence and would not be in the public interest. *See Sierra Club v. Va. Elec. & Power Co.*, No. 2:15-CV-112, 2017 WL 1095039, at \*9 (E.D. Va. Mar. 23, 2017).

538. Accordingly, the Court concludes that Plaintiffs' have failed to satisfy the four-factor test for injunctive relief and that Plaintiffs' remaining claims for injunctive relief should not be granted because (1) TVA has applied for a renewed NPDES Permit at Gallatin; (2) the evidence shows that a corrective action in the State Enforcement Action is anticipated and likely will include the imposition of a closure remedy that is expected to address the entire Gallatin site; (3) EPA has studied the environmental impacts of CCR unit closure extensively and TVA's proposal to close-in-place clearly is an option available to TVA under the CCR Rule; (4) closure-by-removal would be detrimental to the public interest because of the extraordinary cost, time duration, and collateral environmental, safety, and transportation impacts associated with closure-by-removal; and (5) TVA's plans for cap-in-place closure are sufficient to address the alleged CWA violations at issue in this citizen enforcement action.

539. The Court also concludes that Plaintiffs have adequate opportunity for legal recourse if they believe that TDEC's permitting decision or the remedy resulting from the State Enforcement Action is insufficient because (1) Plaintiffs will be able to challenge TDEC's permitting decision with respect to TVA's application for a renewed Gallatin NPDES Permit; and (2) if Plaintiffs believe the State Enforcement Action culminates in a deficient corrective action for Gallatin, Plaintiffs can simply file another citizen enforcement action under 33 U.S.C. § 1365(a).

540. For the reasons explained in TVA's Post-Trial Brief and in addition to the fact that Plaintiffs have failed to meet their burden of proof on liability, the Court finds that the appointment of a Special Master under Federal Rule of Civil Procedure 53 or other expert under Federal Rule of Evidence 706 is not necessary because (1) under the CCR Rule, compliance is calculated to address many, if not all, of Plaintiffs' remedial concerns; and (2) in the State



Enforcement Action, the State of Tennessee and TDEC are pursuing a corrective action for the entire Gallatin site in accordance with their statutory responsibilities under Tennessee law.

Tenn. Code Ann. § 69-3-102(a) (declaring it to be the public policy of Tennessee that, “[i]n the exercise of its public trust over the waters of the state, the government of Tennessee has an obligation to take all prudent steps to secure, protect, and preserve this right”); Tenn. Code Ann. § 69-3-107(1), (14) (empowering TDEC to “[e]xercise general supervision and control over the quality of all state waters, administer and enforce all laws relating to pollution of such waters, and . . . to [i]ssue [NPDES] permits . . . pursuant to § 69-3-108”).

### CONCLUSION

The Court concludes that Plaintiffs have failed to meet their burden of proof on their Ash Pond Complex and Non-Registered Site claims, and the Court finds that Plaintiffs’ claims for civil penalties, declaratory relief, and injunctive relief should be denied and that judgment should be entered in favor of TVA.

Respectfully submitted,

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## CERTIFICATE OF SERVICE

I certify that on April 14, 2017, the foregoing document was filed electronically through the Court's ECF system. Notice of this filing is sent by operation of the Court's ECF system to counsel for all parties as indicated below. Parties may access this filing through the Court's ECF system.

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